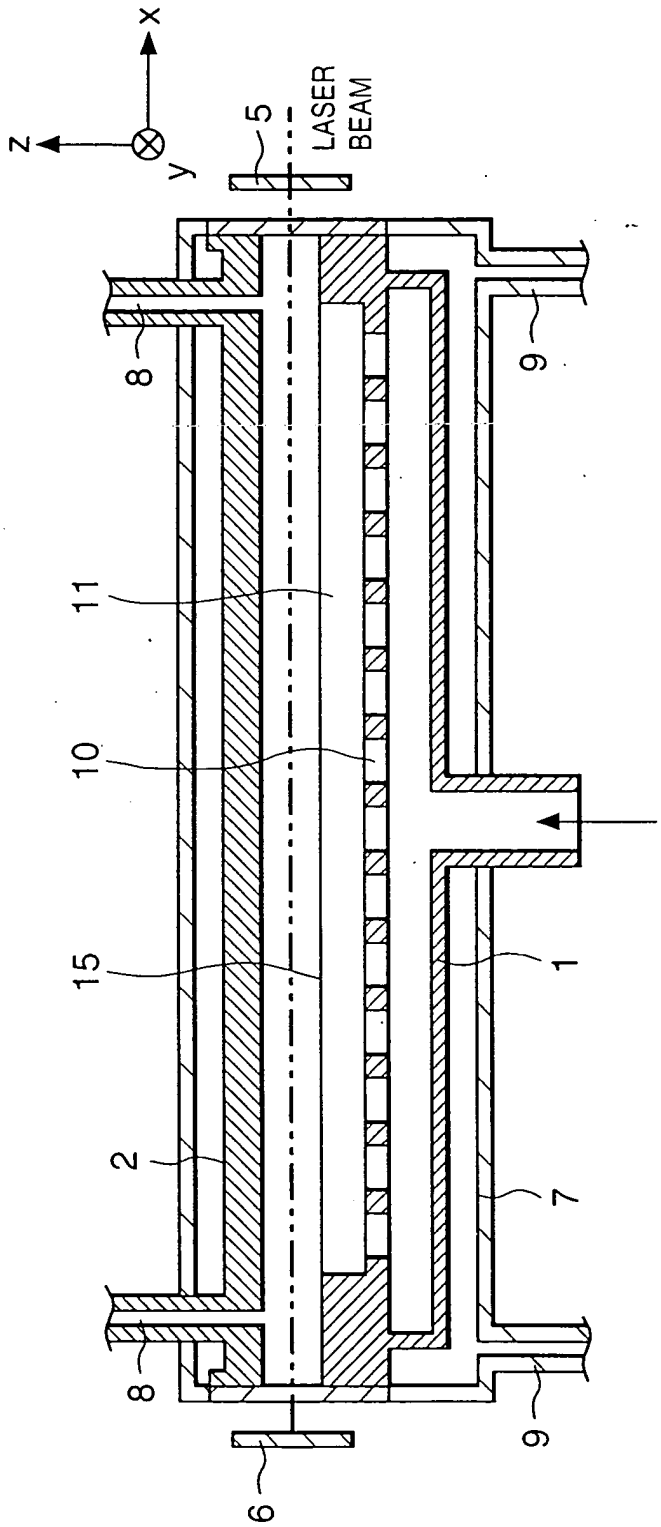
FIG. 1



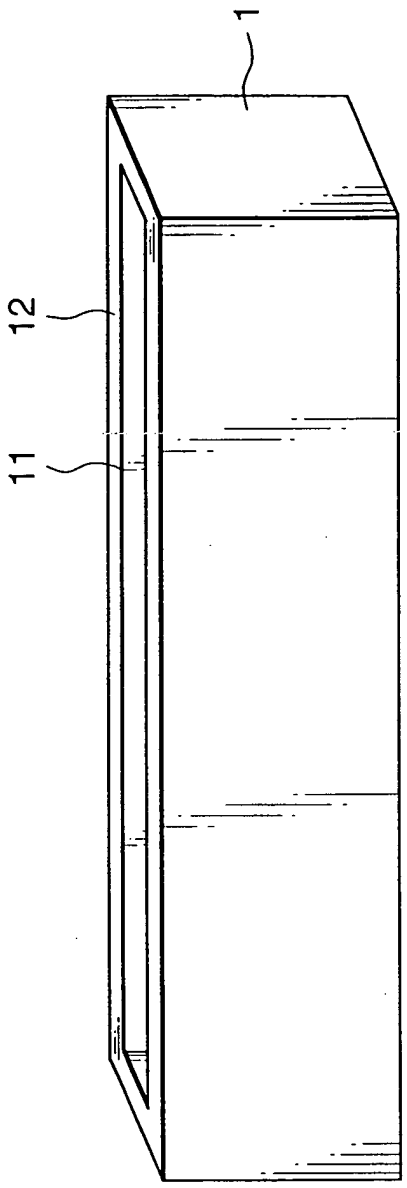


FIG. 2A

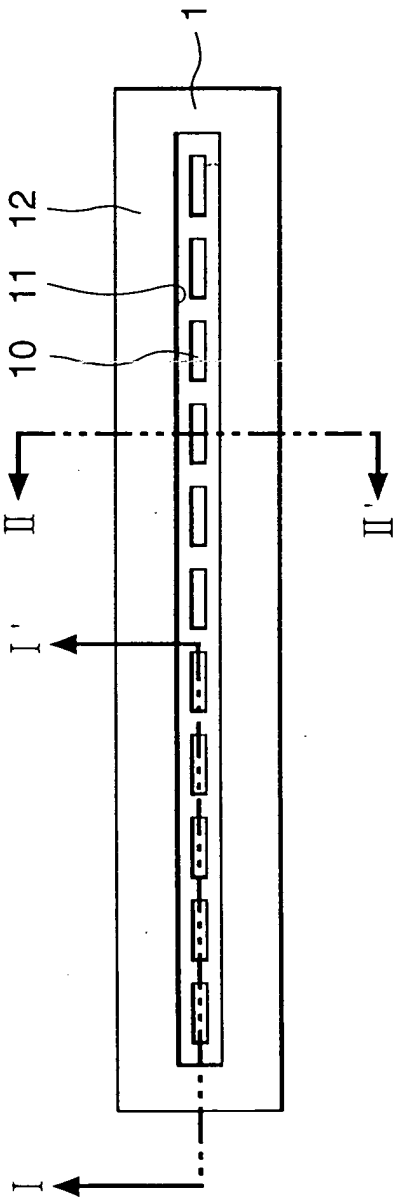


FIG. 2B

FIG. 3A

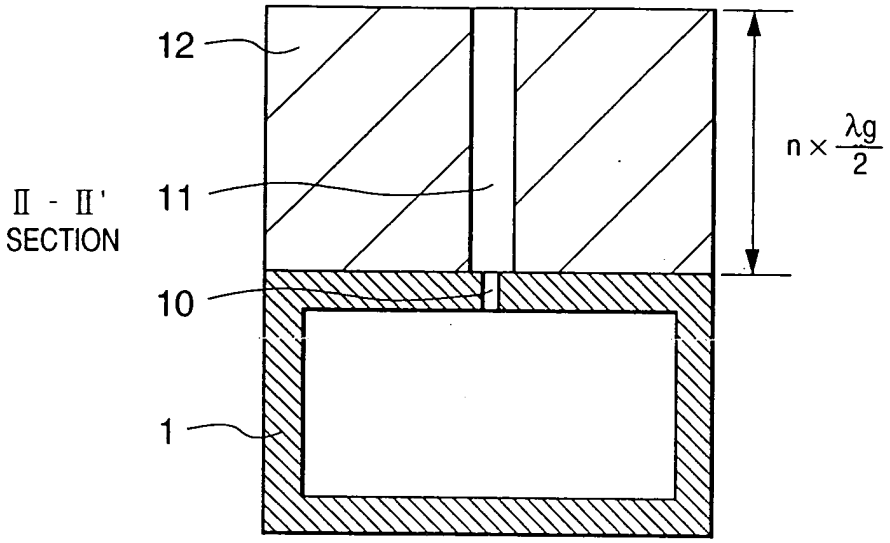


FIG. 3B

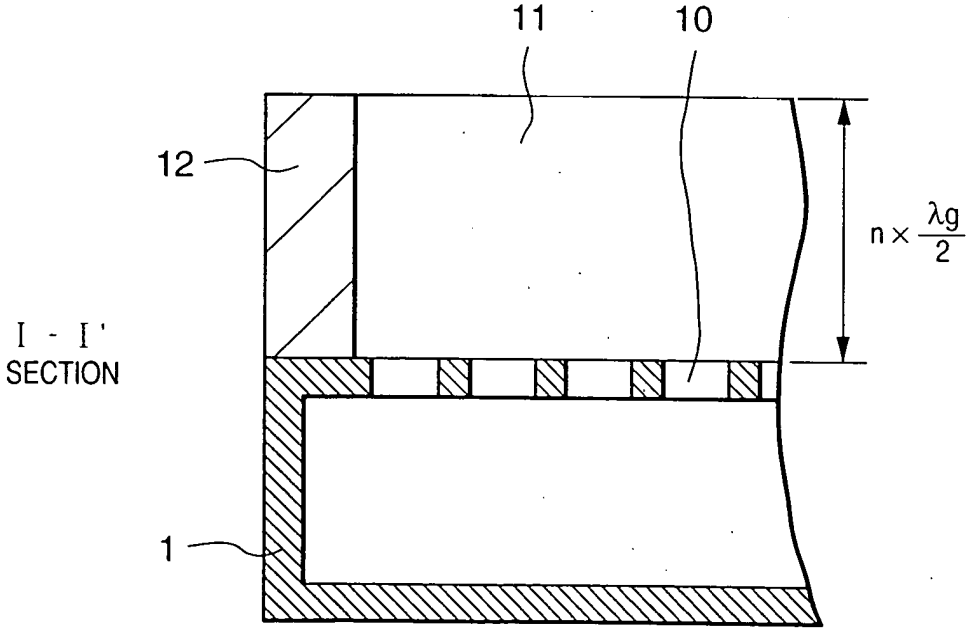


FIG. 4

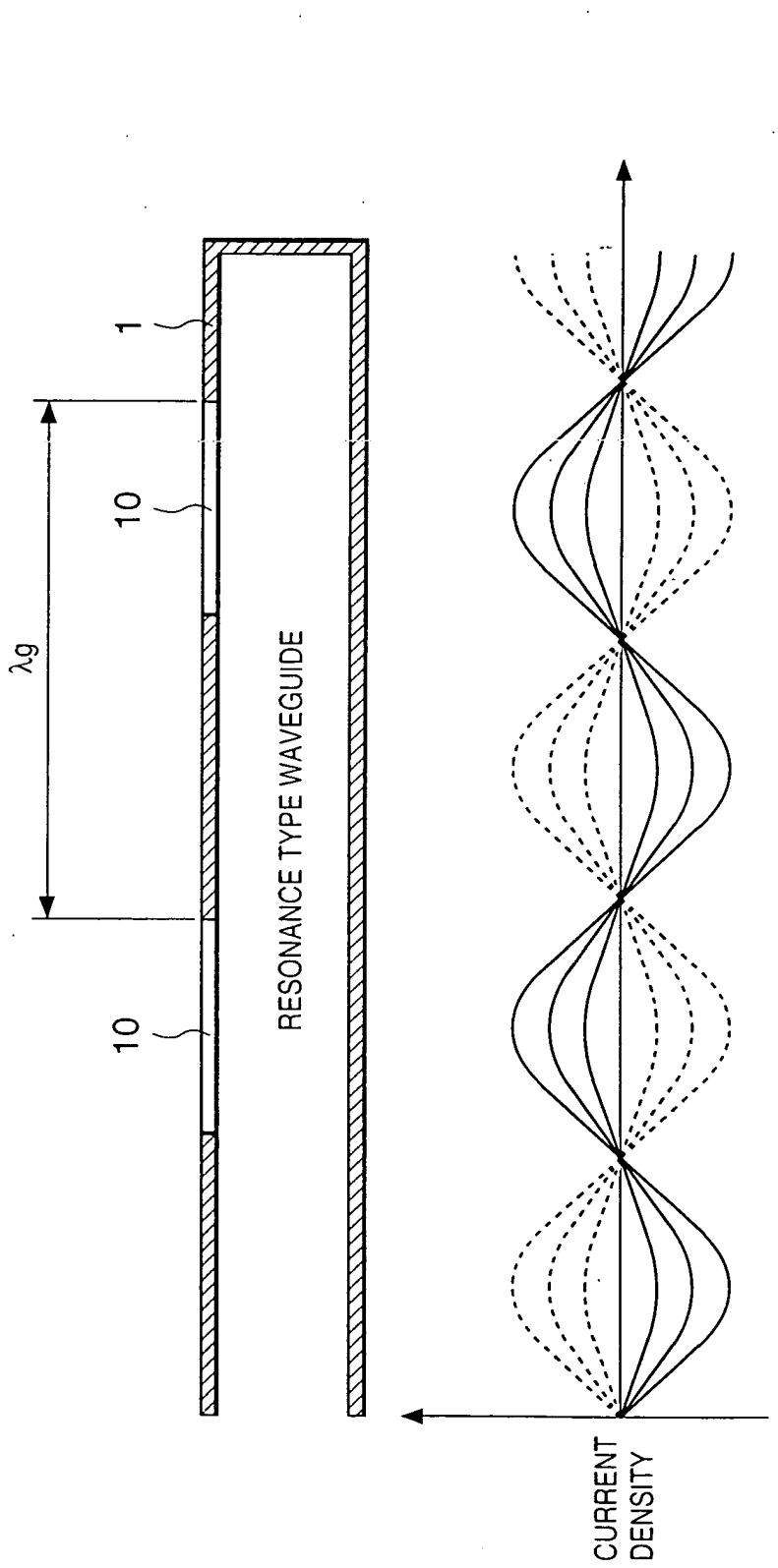


FIG. 5

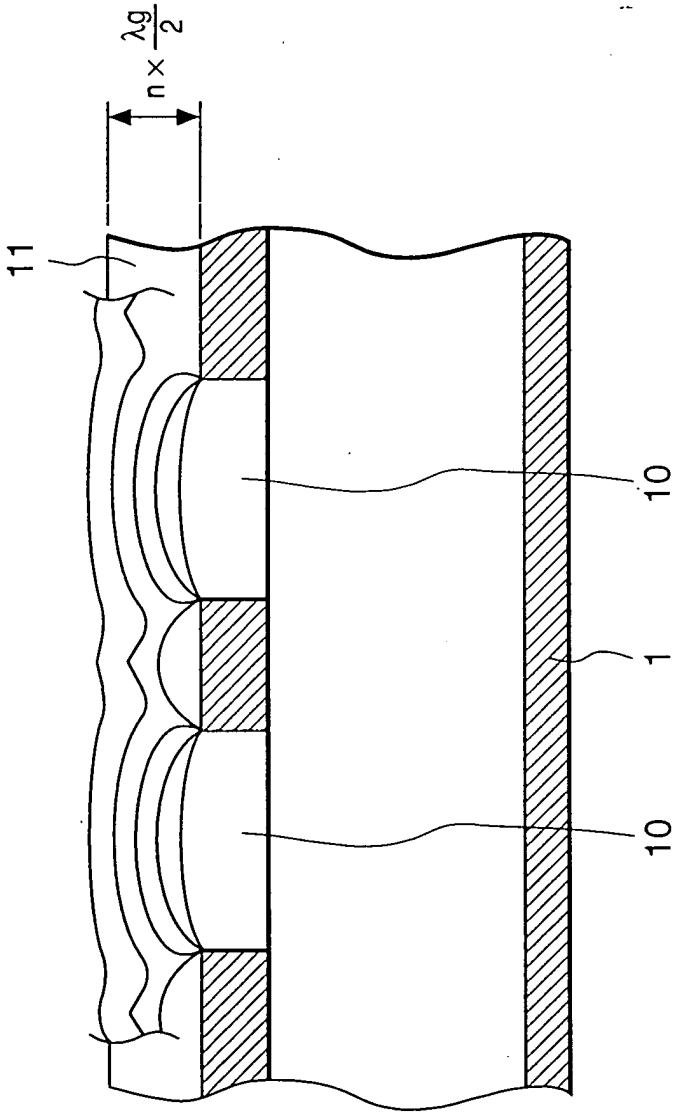


FIG. 6A

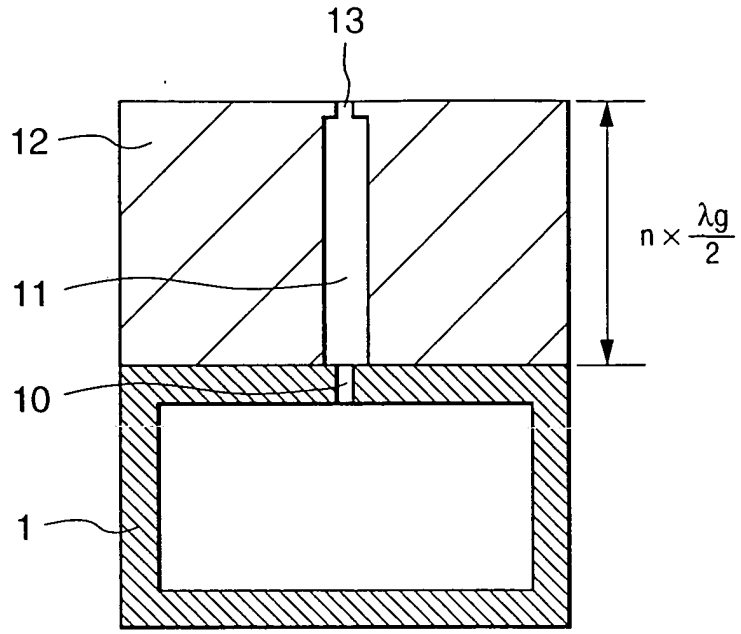


FIG. 6B

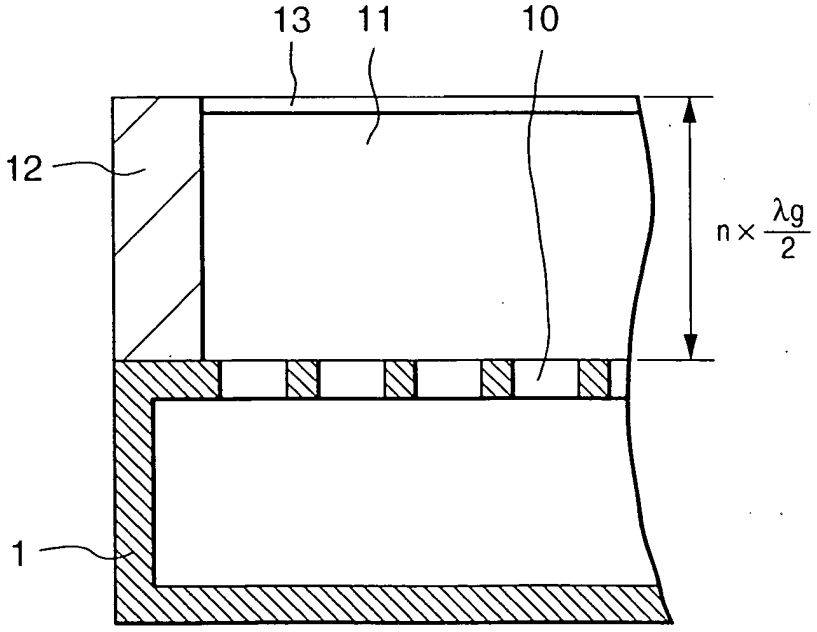


FIG. 7

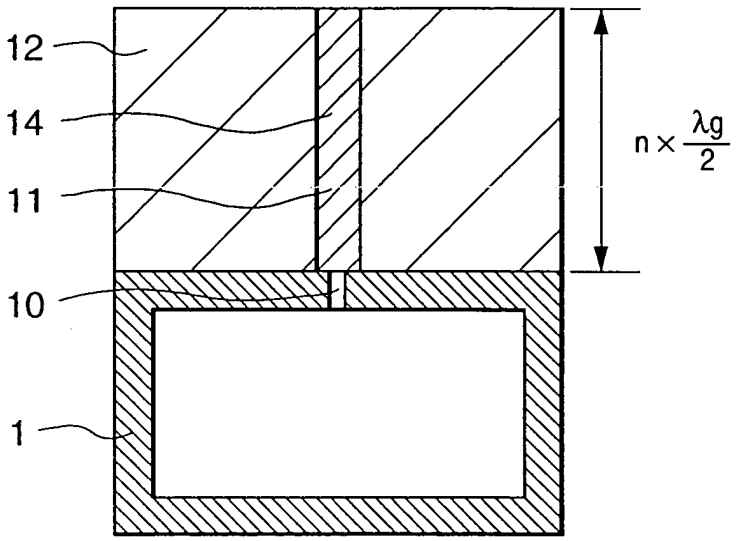


FIG. 8

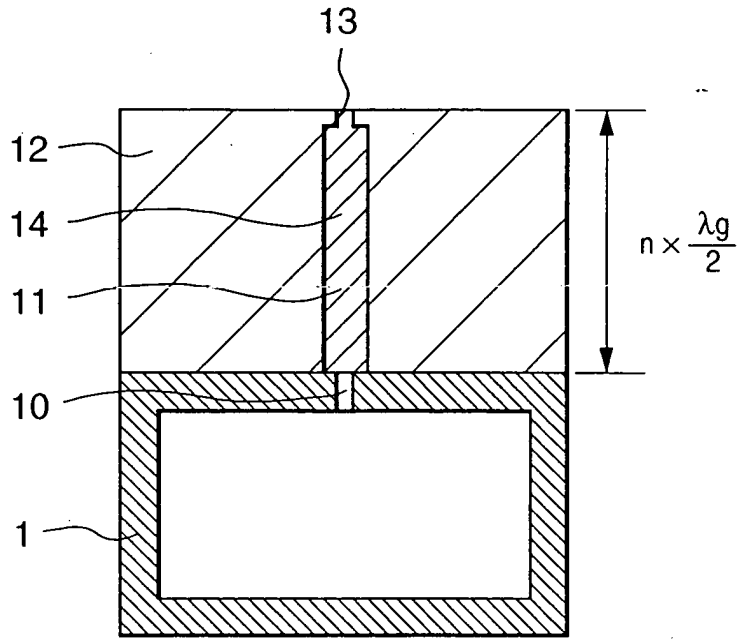


FIG. 9A

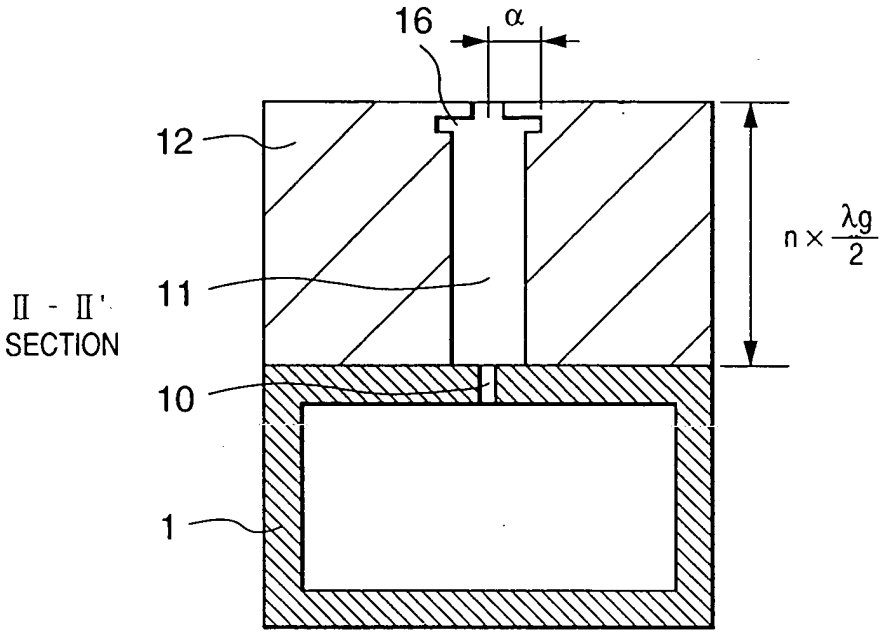


FIG. 9B

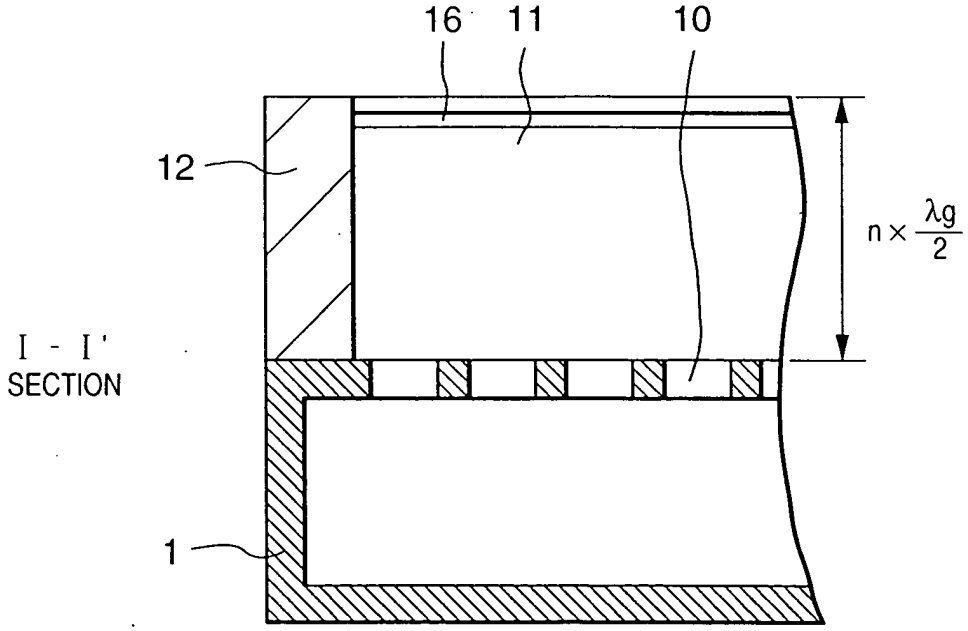


FIG. 10

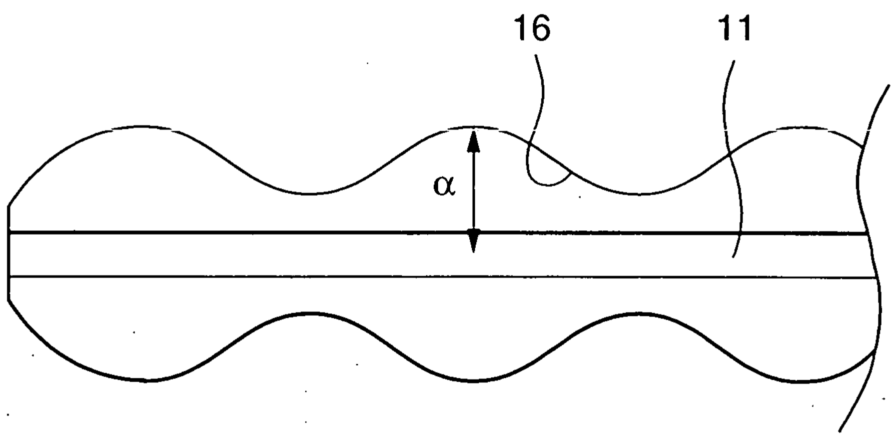


FIG. 11

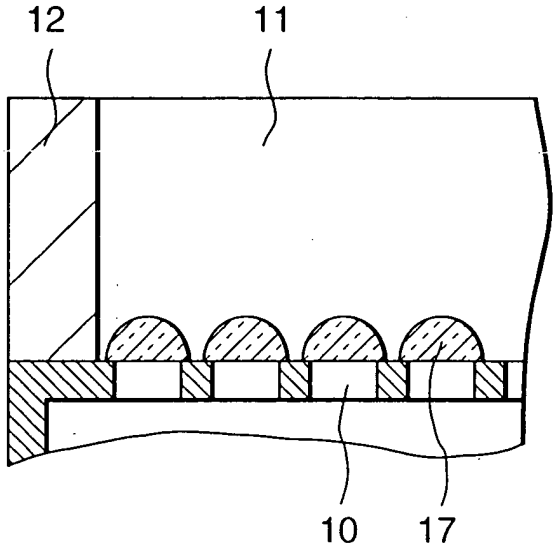


FIG. 12

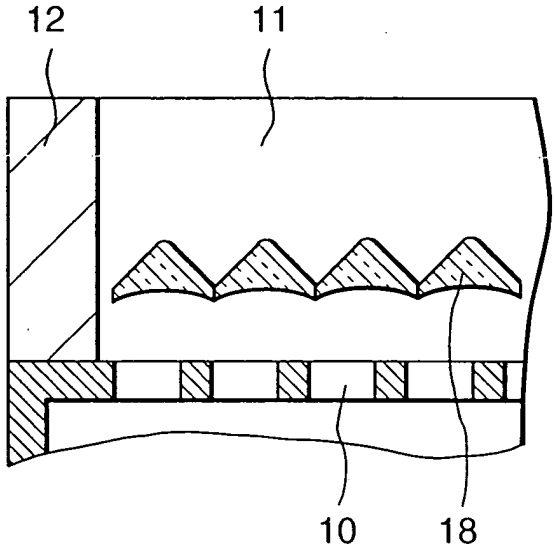


FIG. 13A

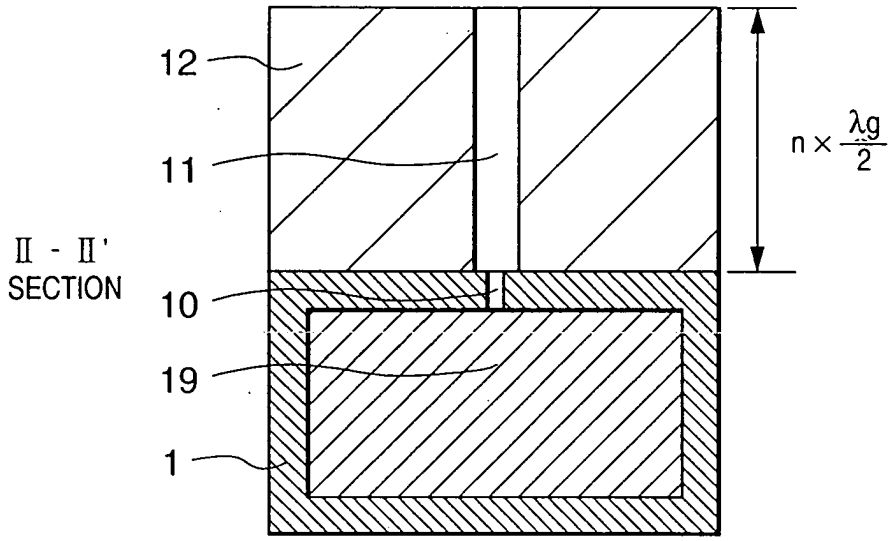


FIG. 13B

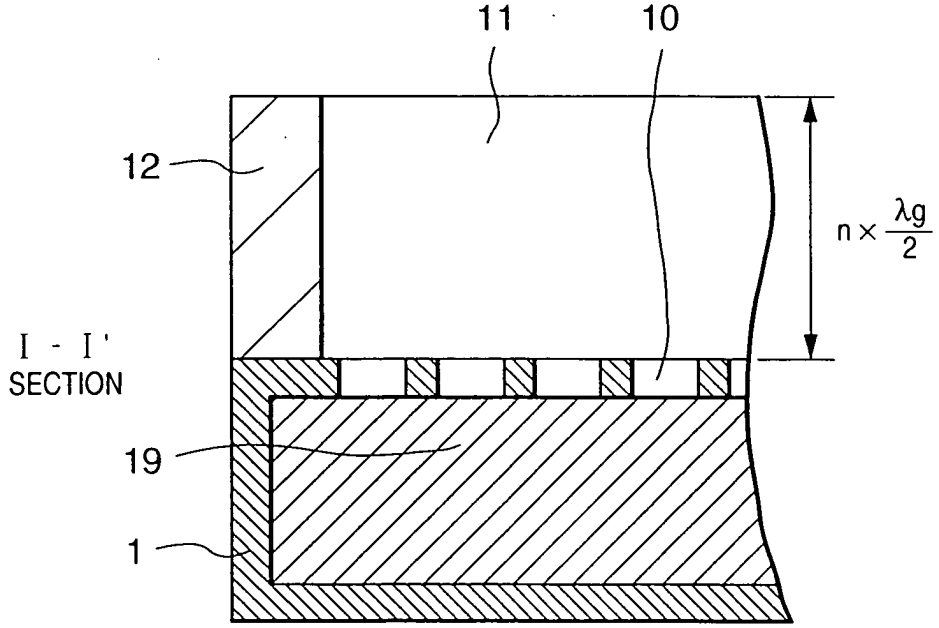
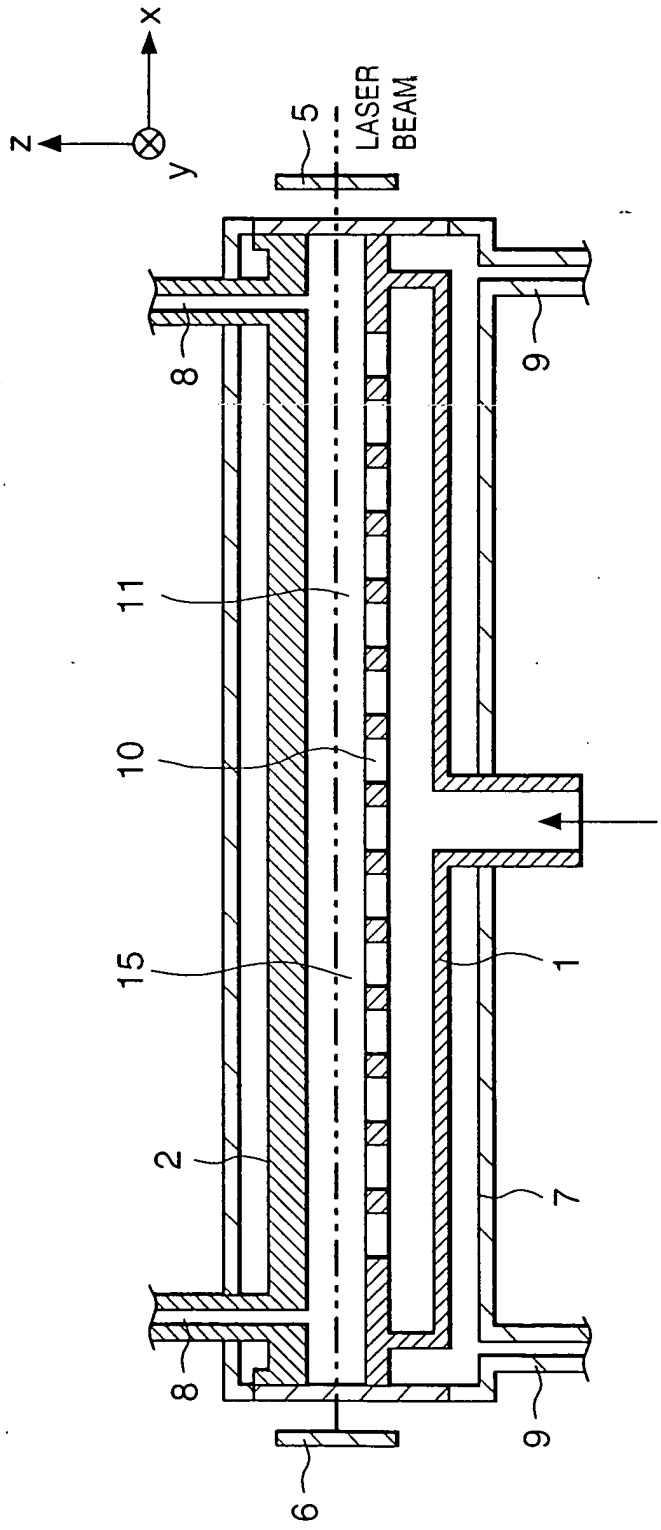


FIG. 14



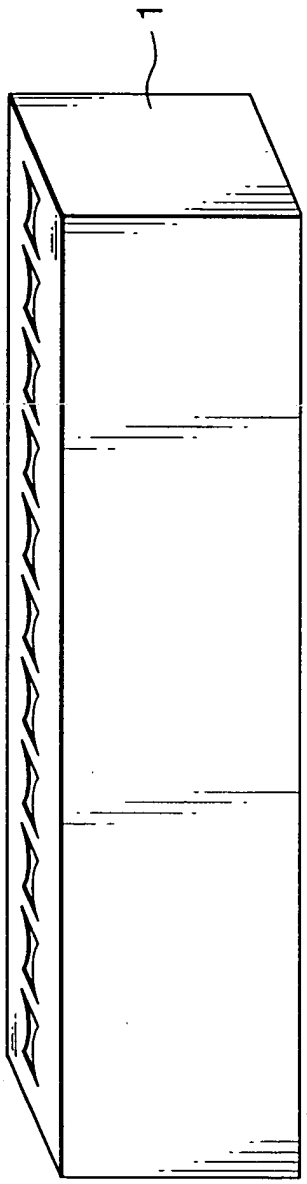


FIG. 15A

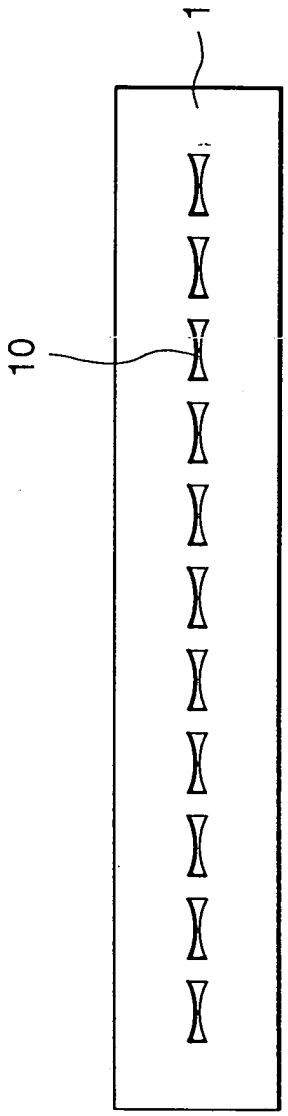


FIG. 15B

FIG. 16A

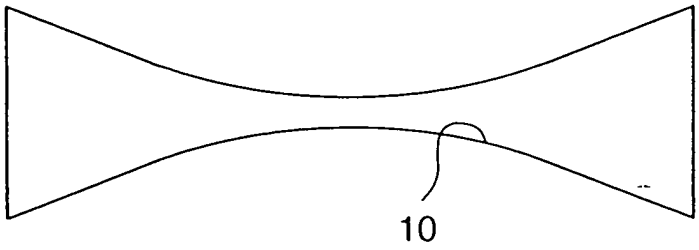


FIG. 16B

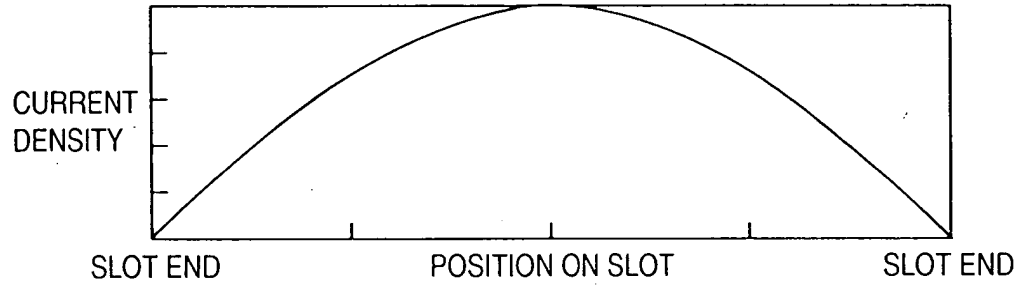


FIG. 16C

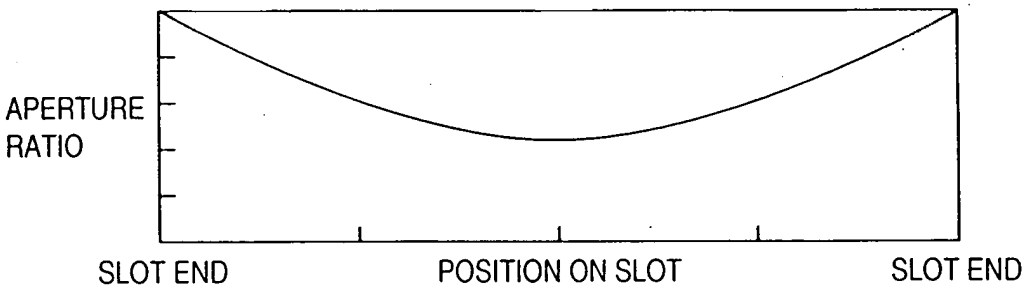


FIG. 16D

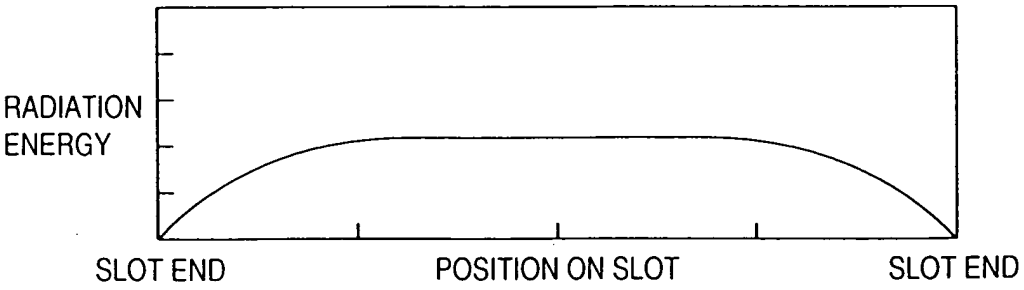


FIG. 17A

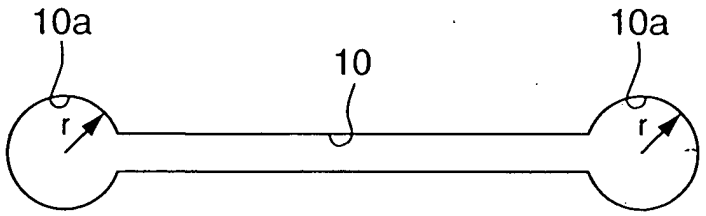


FIG. 17B

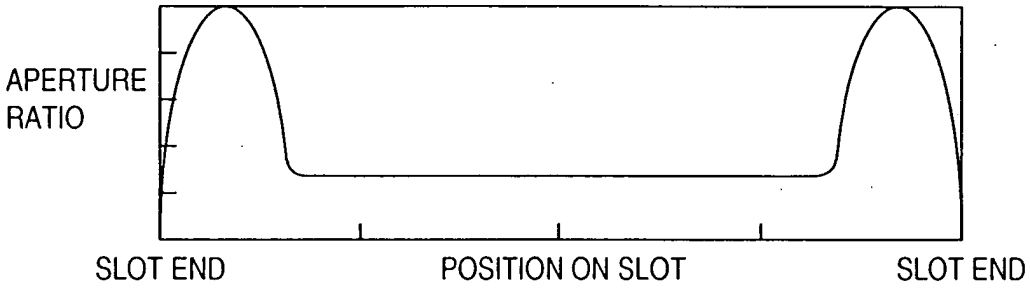


FIG. 17C

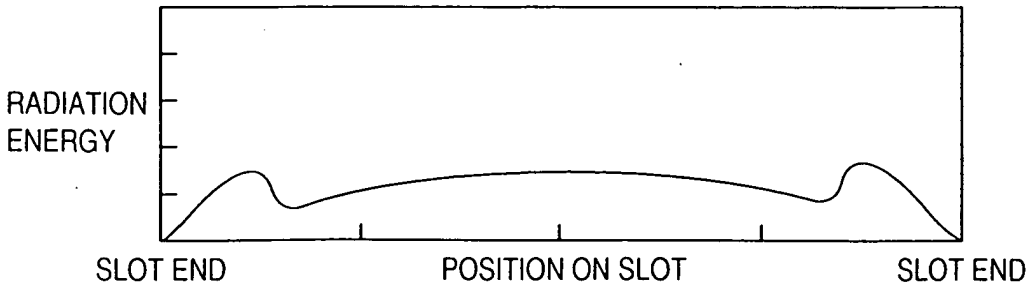


FIG. 18A

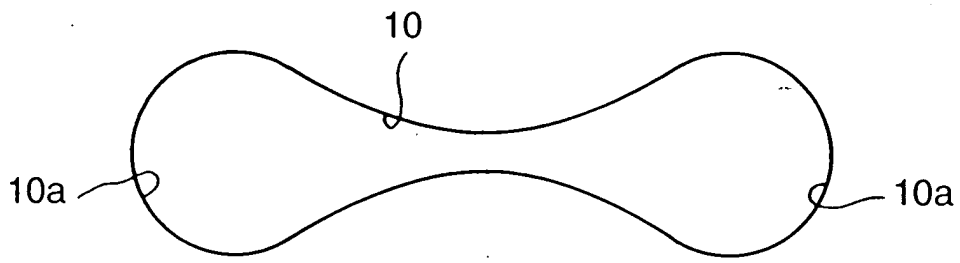


FIG. 18B

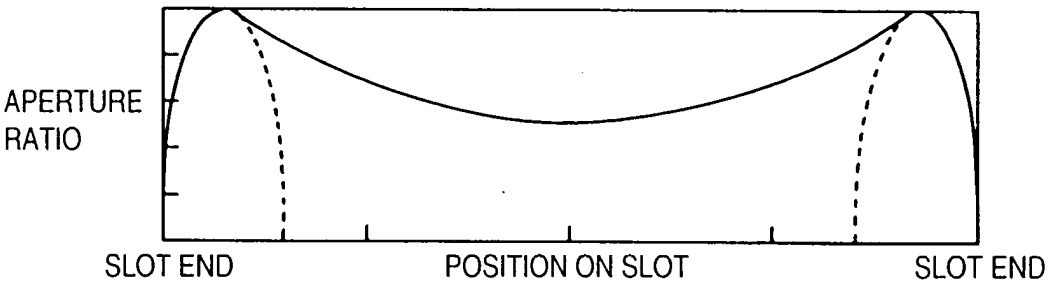


FIG. 18C

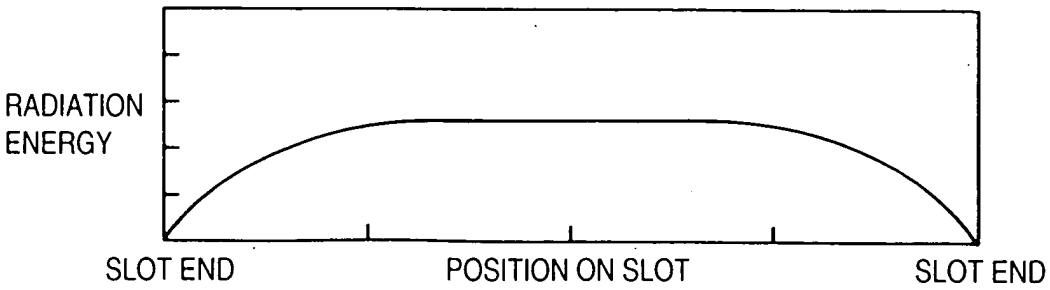


FIG. 19A

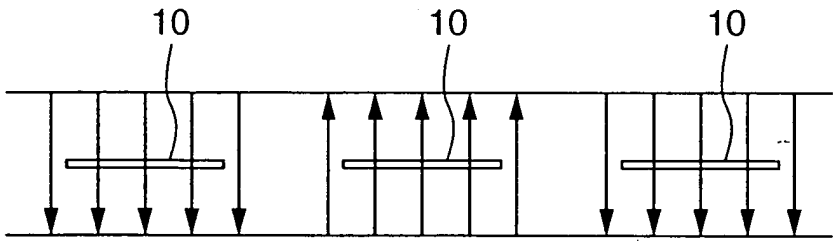


FIG. 19B

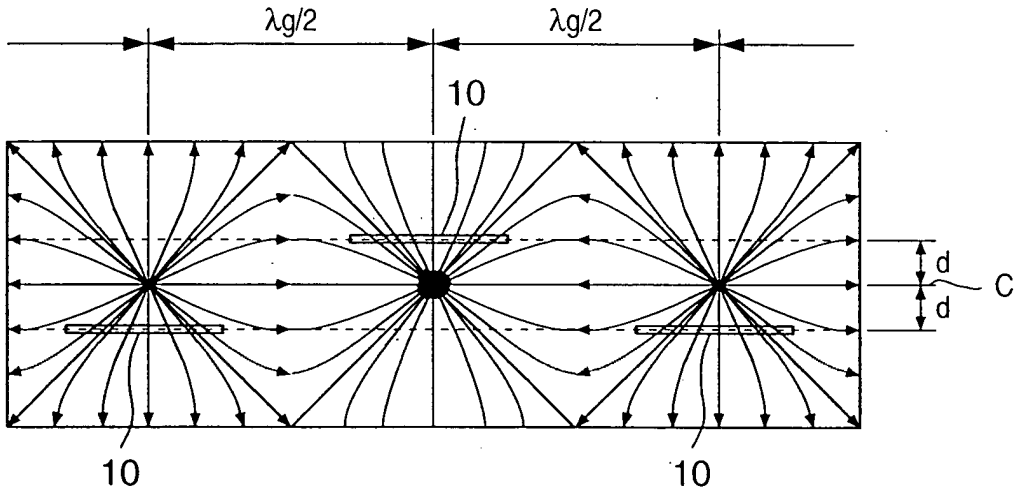


FIG. 19C

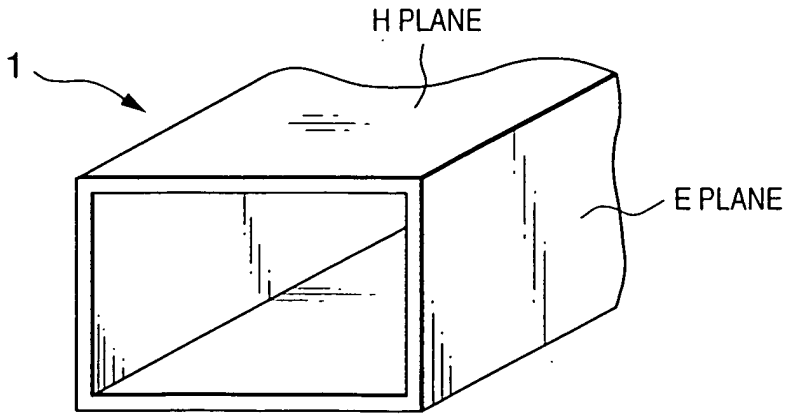


FIG. 20A

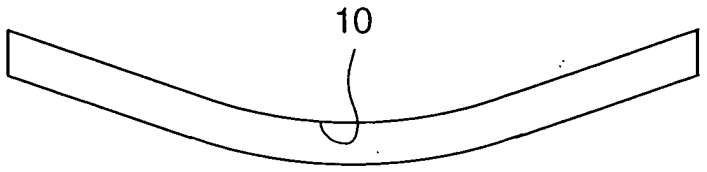


FIG. 20B

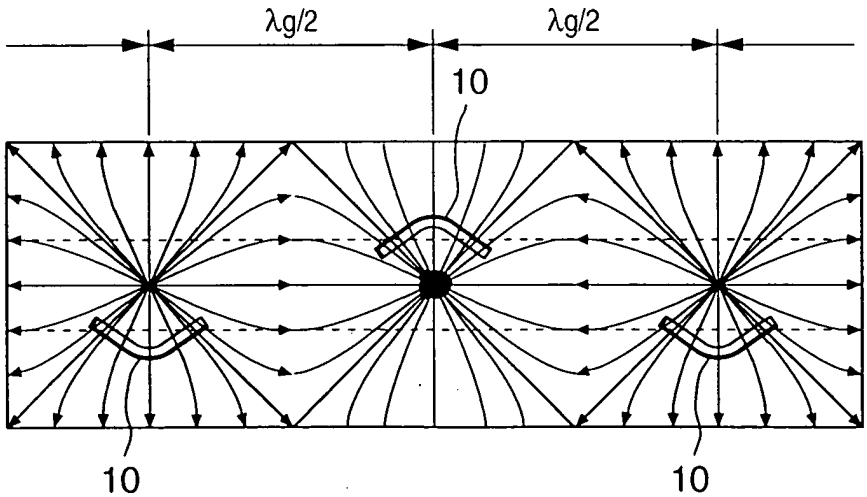


FIG. 21A

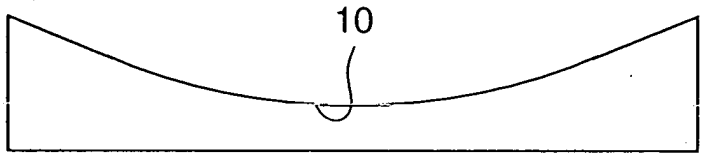


FIG. 21B

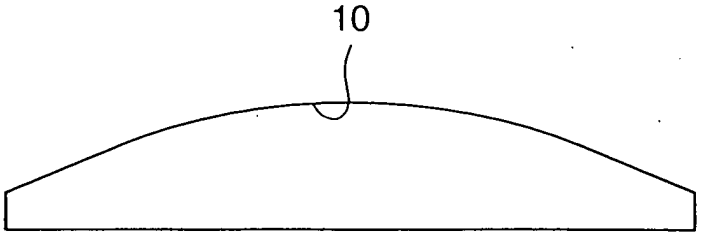


FIG. 22A

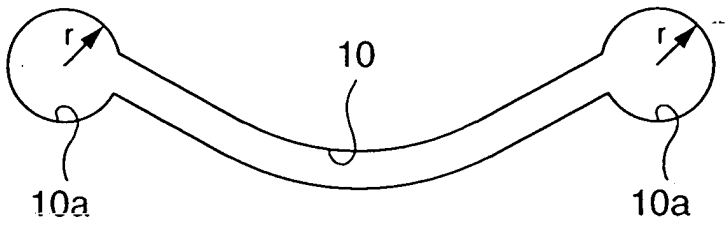


FIG. 22B

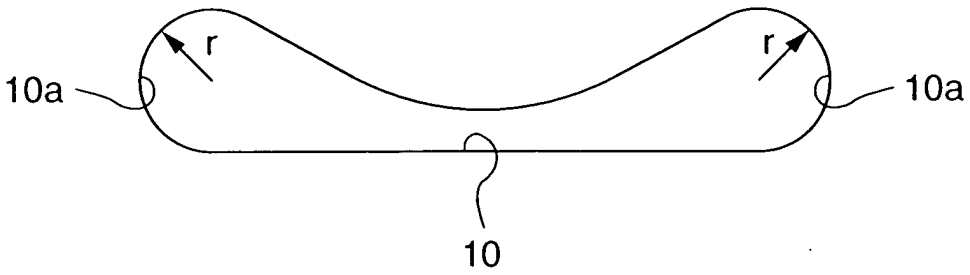


FIG. 23

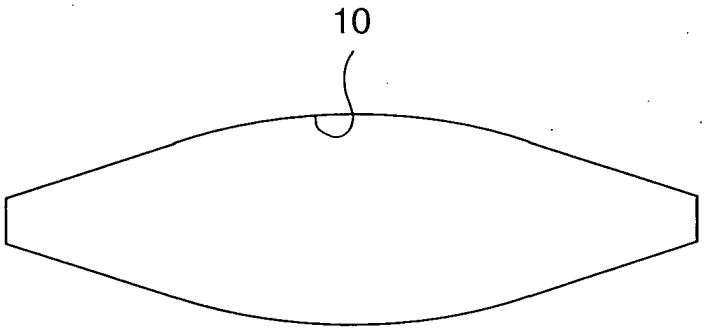
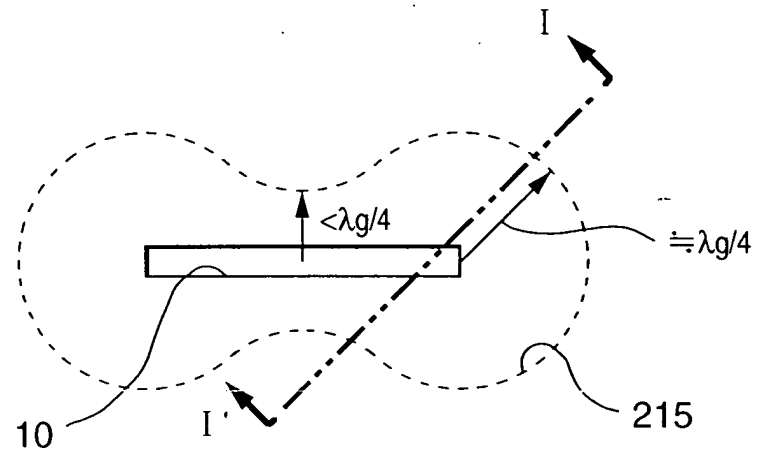
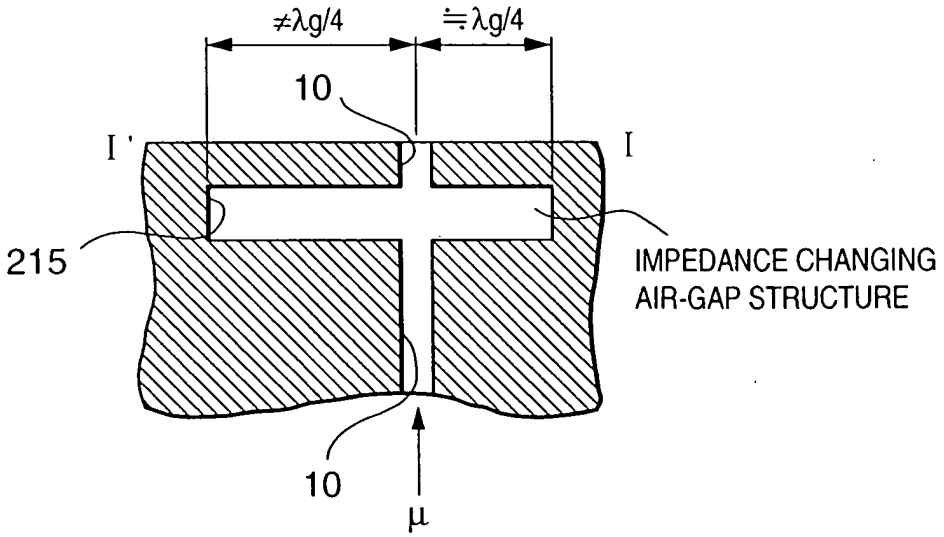


FIG. 24A



POSITIONAL RELATIONSHIP OF
IMPEDANCE CHANGING AIR GAP

FIG. 24B



SECTIONAL VIEW (I - I ') OF
IMPEDANCE CHANGING AIR GAP

FIG. 25A

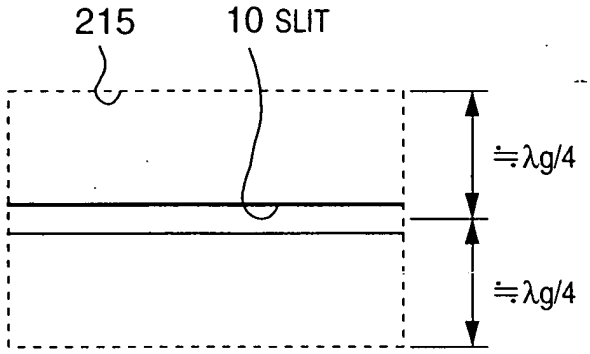
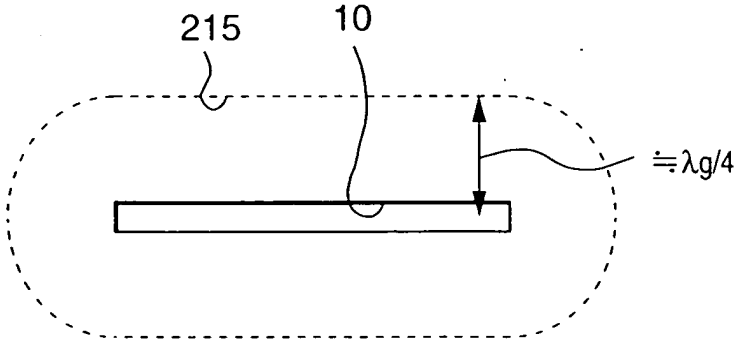


FIG. 25B



POSITIONAL RELATIONSHIP OF
λg/4-LONG AIR-GAP STRUCTURE

FIG. 26A

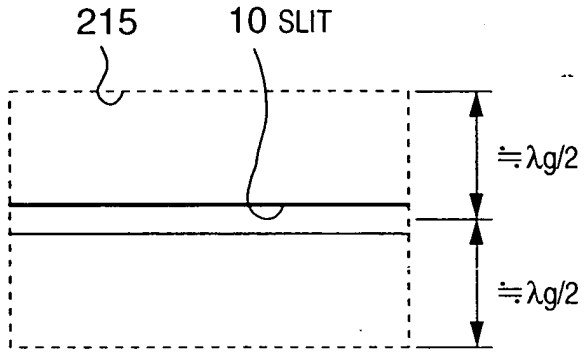
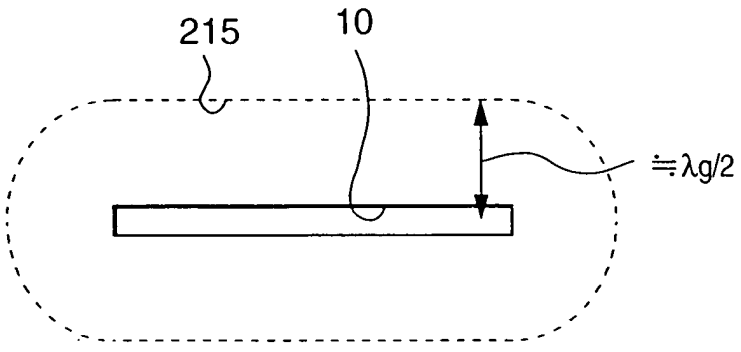
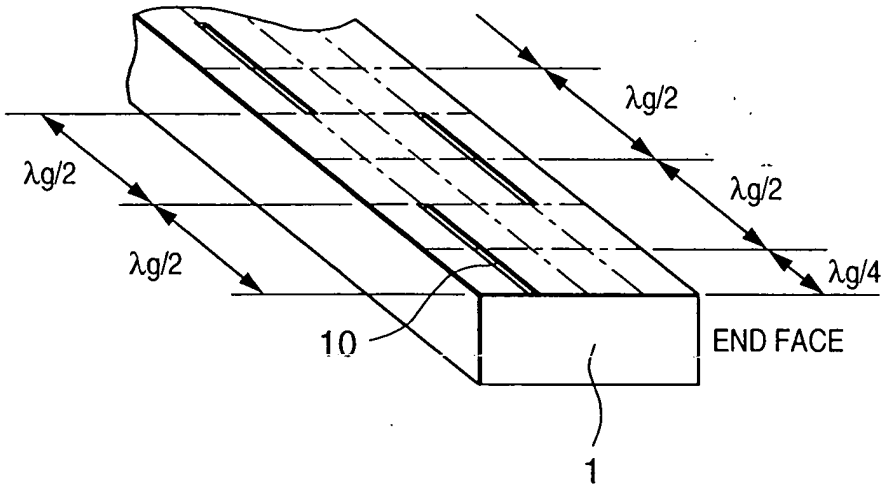


FIG. 26B



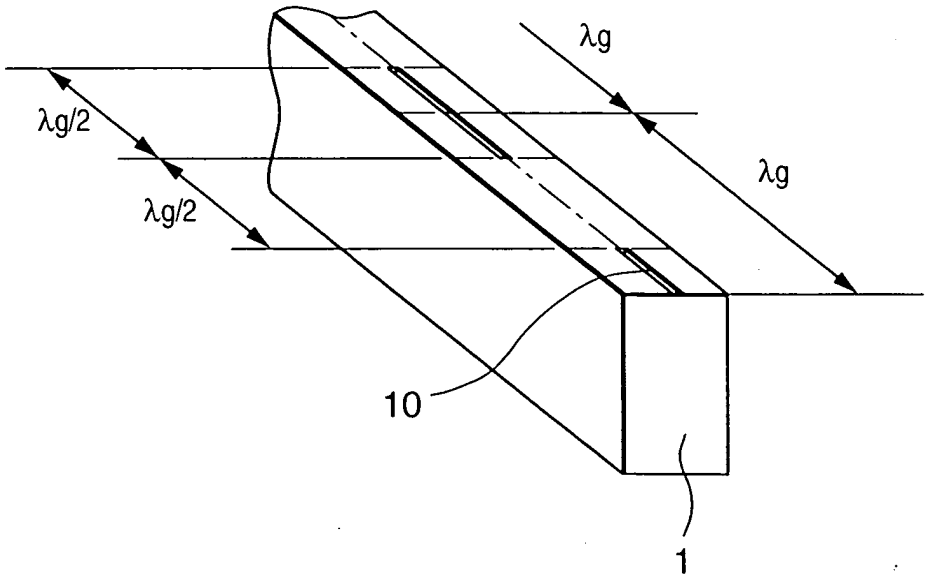
POSITIONAL RELATIONSHIP OF
λg/2-LONG AIR-GAP STRUCTURE

FIG. 27A



RESONANCE LENGTH SLOT λg/2-PITCH
H-PLANE ANTENNA STRUCTURE

FIG. 27B



RESONANCE LENGTH SLOT λg-PITCH
E-PLANE ANTENNA STRUCTURE

FIG. 28A

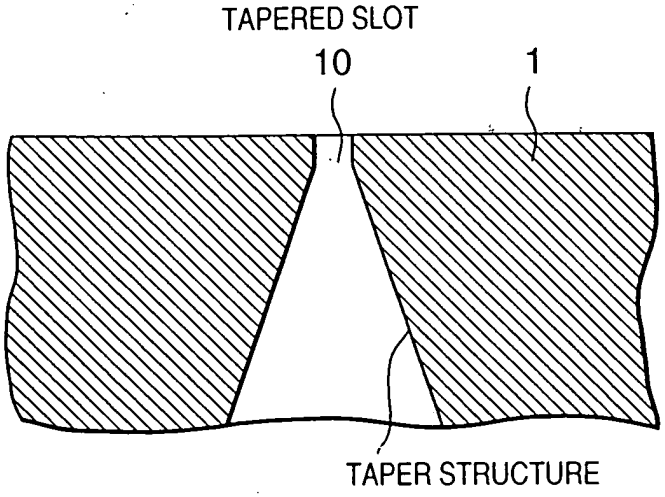


FIG. 28B

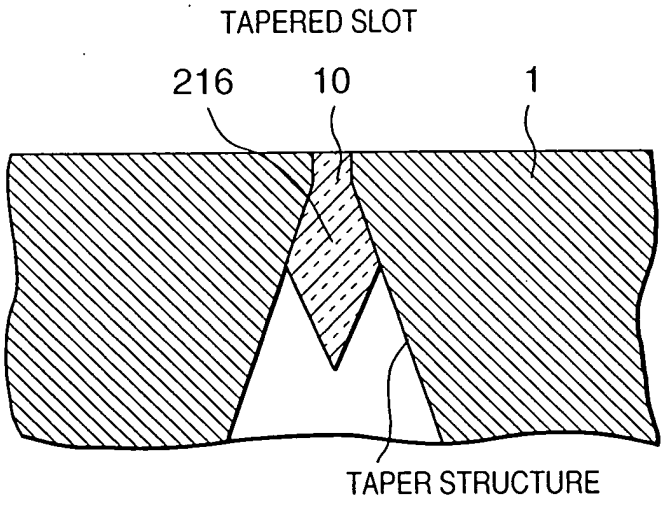


FIG. 28C

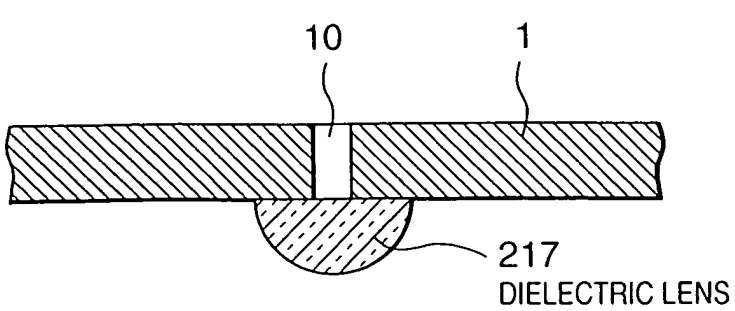


FIG. 29

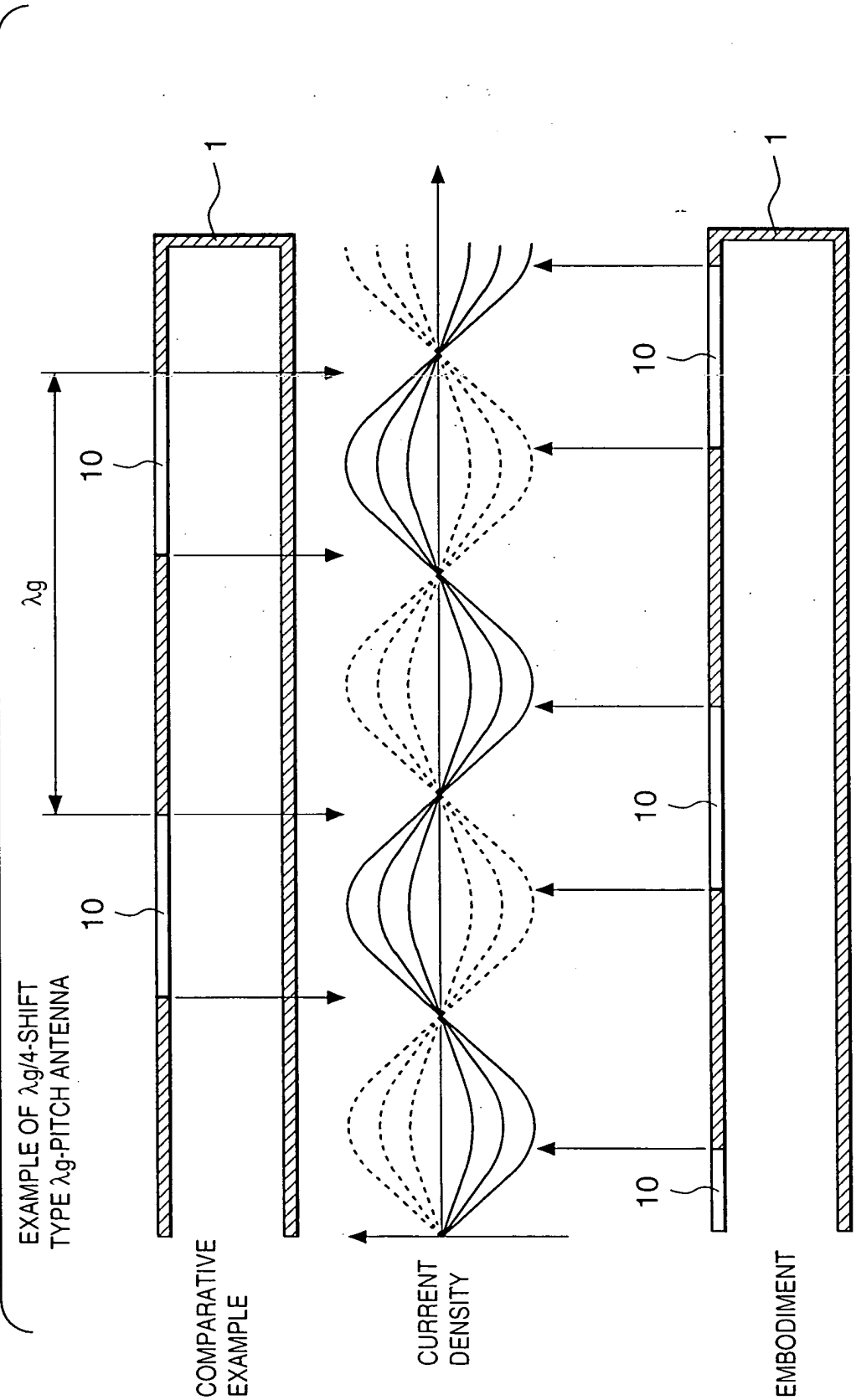

EXAMPLE OF λg/4-SHIFT TYPE λg-PITCH ANTENNA
λg
10
10
1
COMPARATIVE EXAMPLE
CURRENT DENSITY
10
10
10
1
EMBODIMENT

FIG. 30

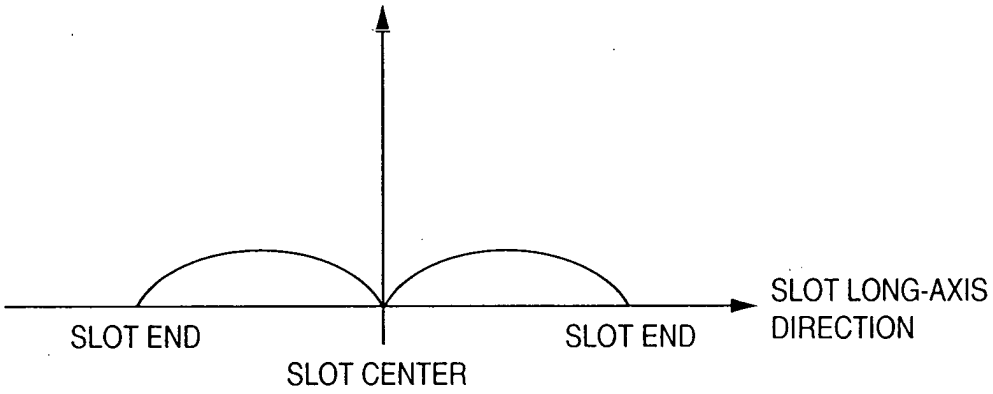


FIG. 31

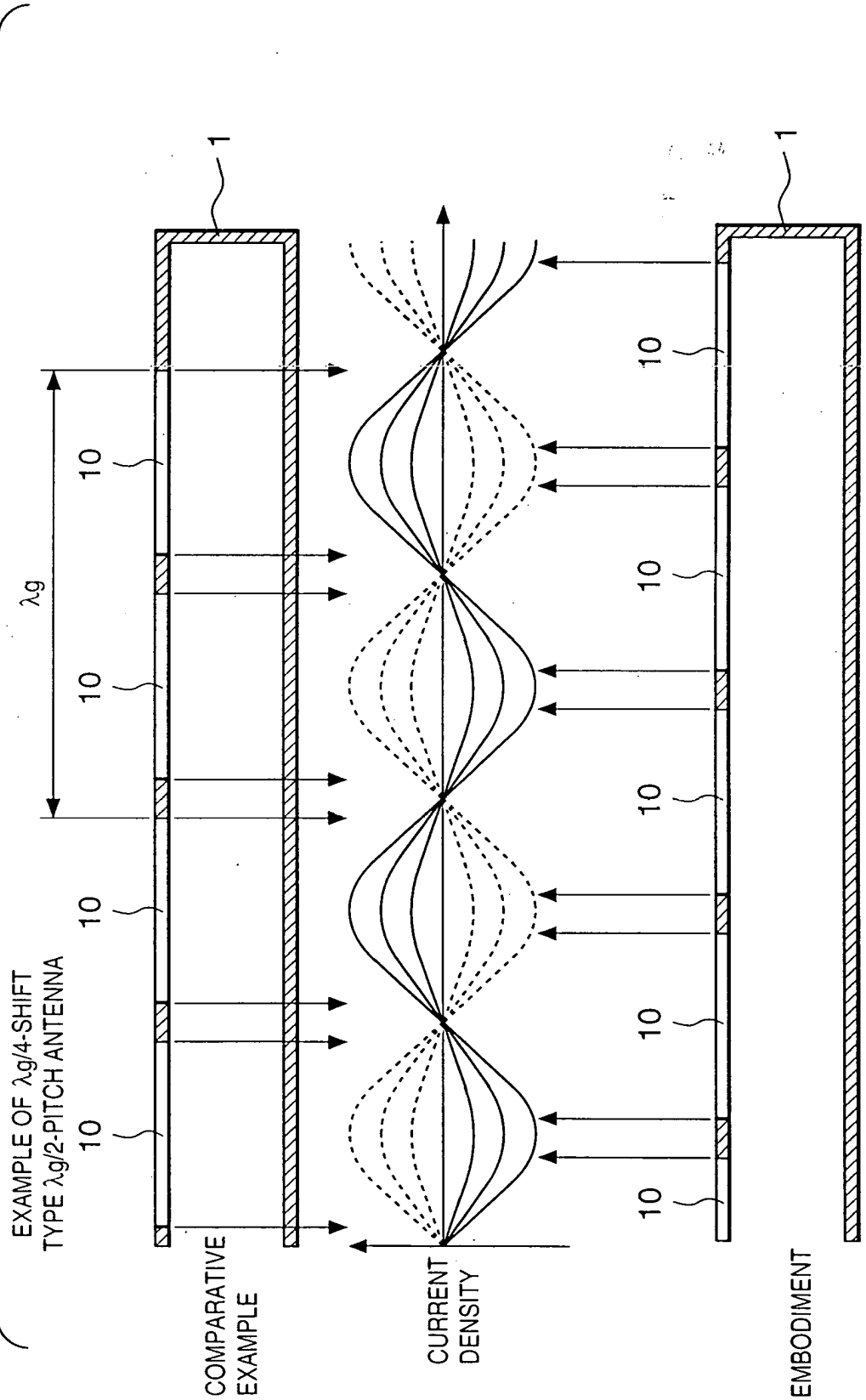

EXAMPLE OF λg/4-SHIFT TYPE λg/2-PITCH ANTENNA
λg
10
1
COMPARATIVE EXAMPLE
CURRENT DENSITY
EMBODIMENT

FIG. 32A

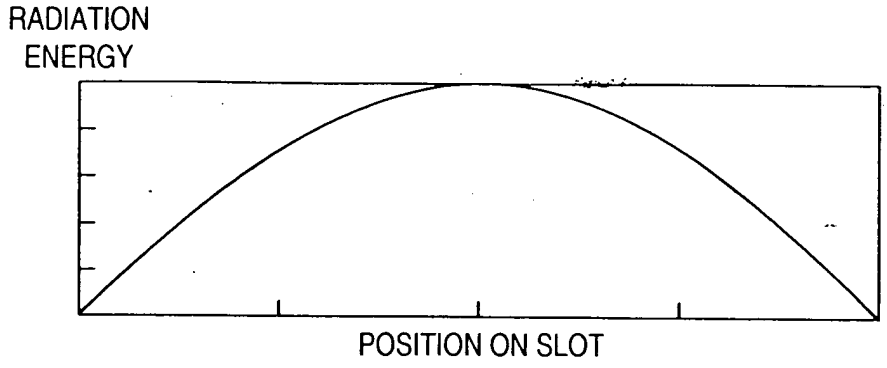


FIG. 32B

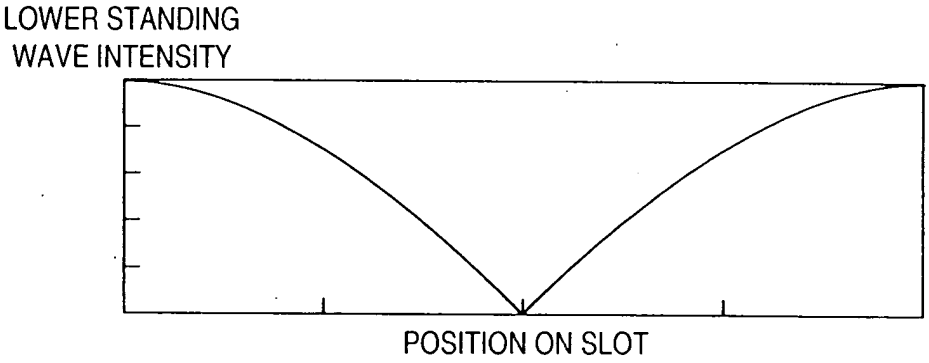
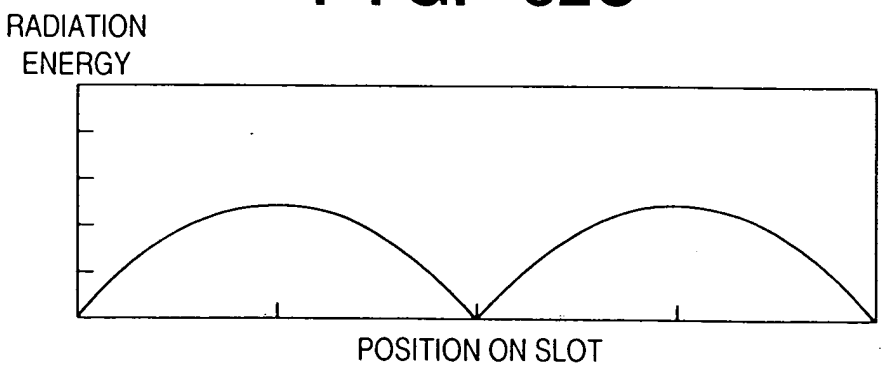


FIG. 32C



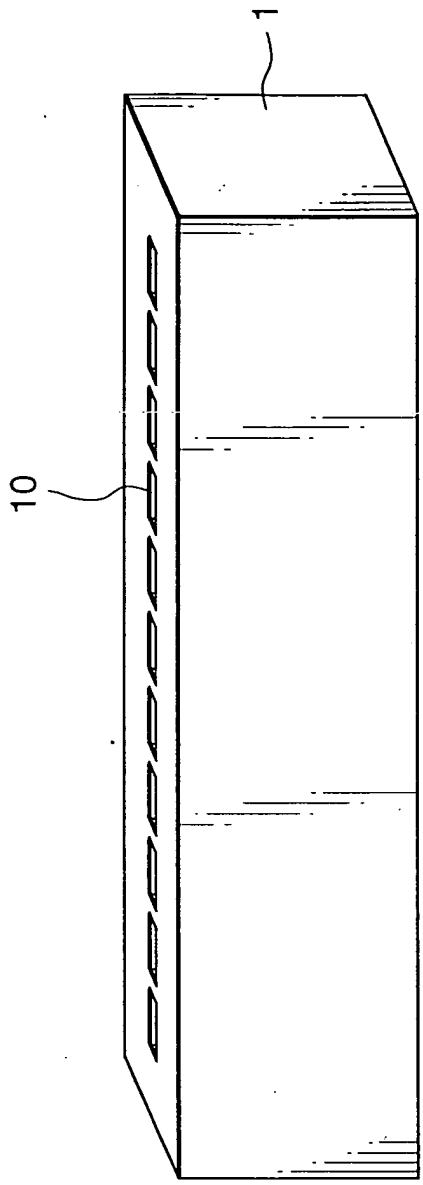


FIG. 33A

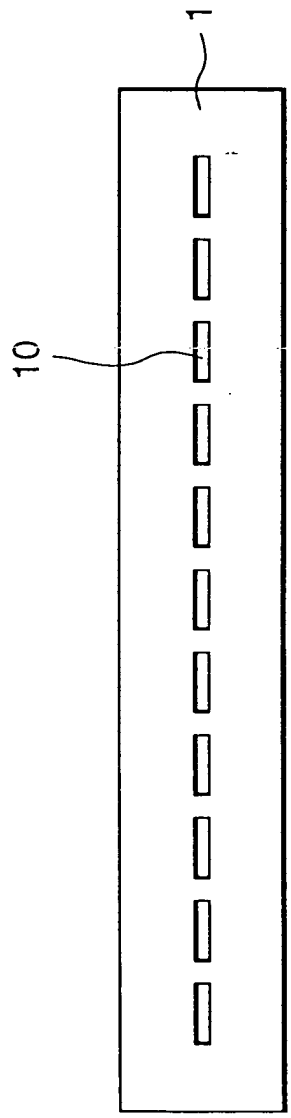


FIG. 33B

FIG. 34A

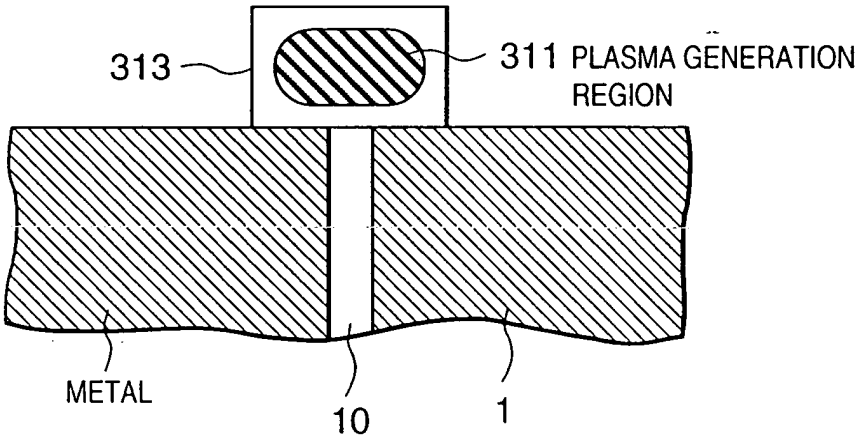


FIG. 34B

SECTION VIEWED IN DIRECTION
PERPENDICULAR TO SLOT LONG-AXIS DIRECTION

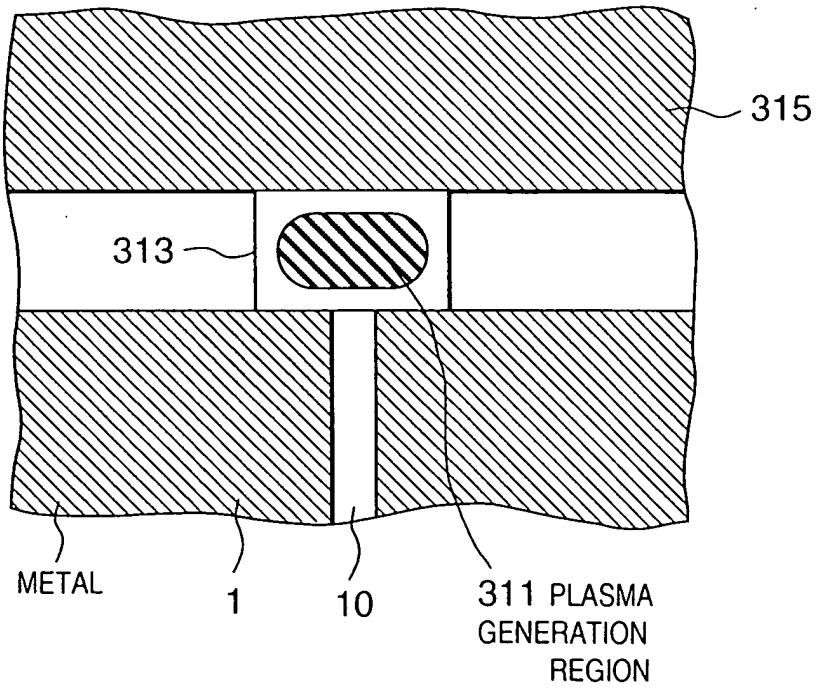


FIG. 35A

PLAN VIEW OF NOZZLE SHIELD

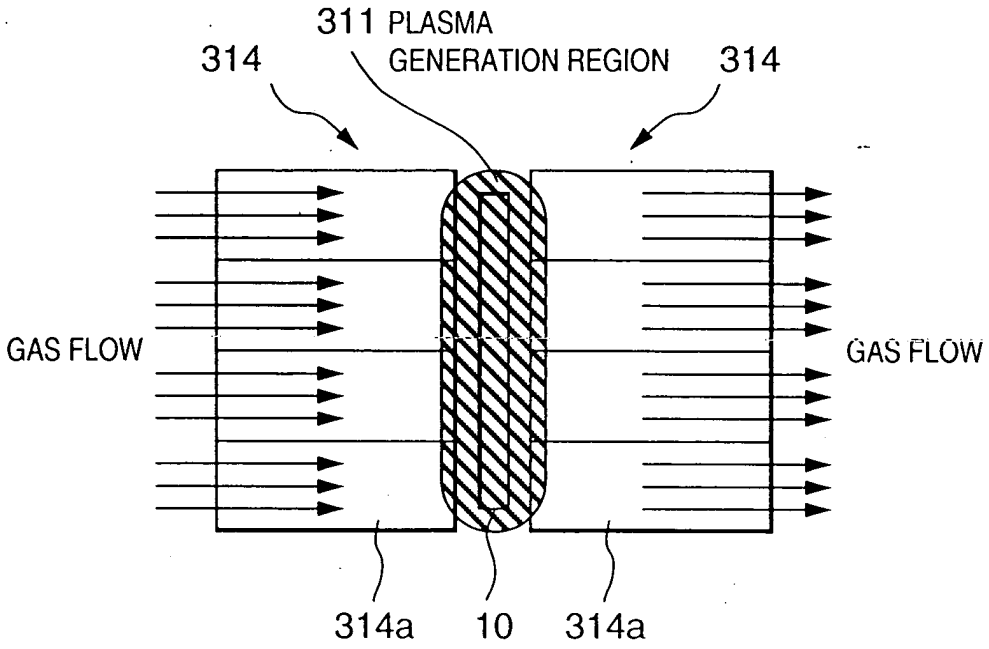


FIG. 35B

OUTLINE OF NOZZLE SHIELD

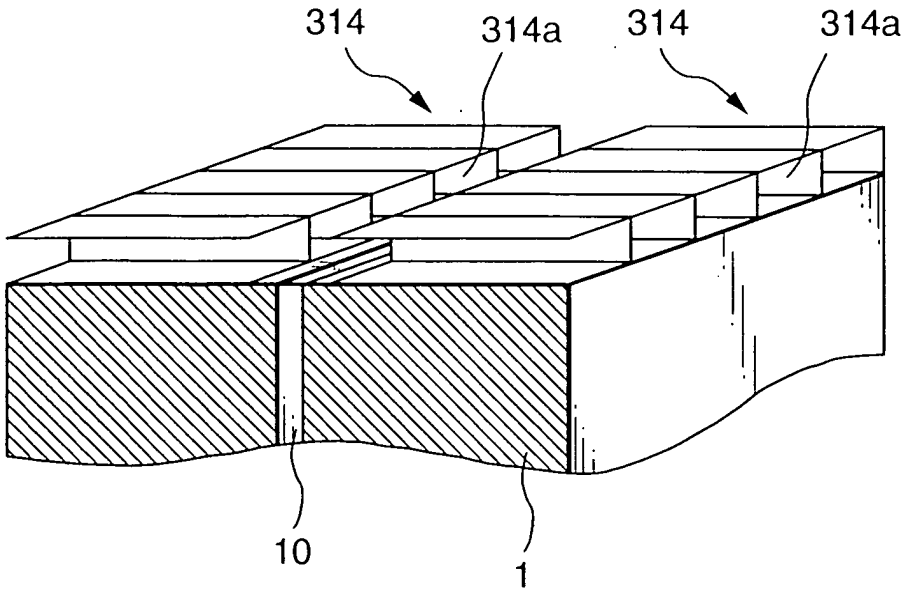


FIG. 36A

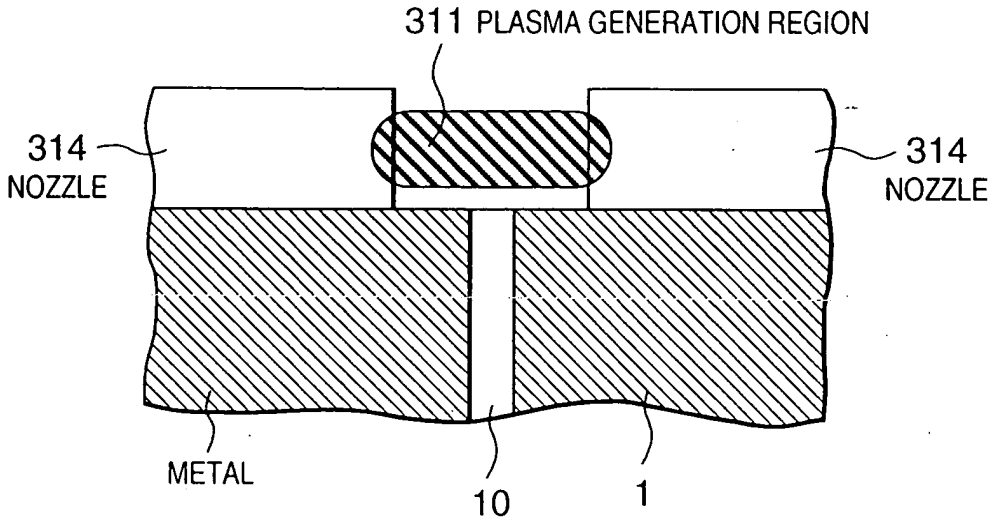


FIG. 36B

SECTION VIEWED IN SLOT
SHORT-AXIS DIRECTION

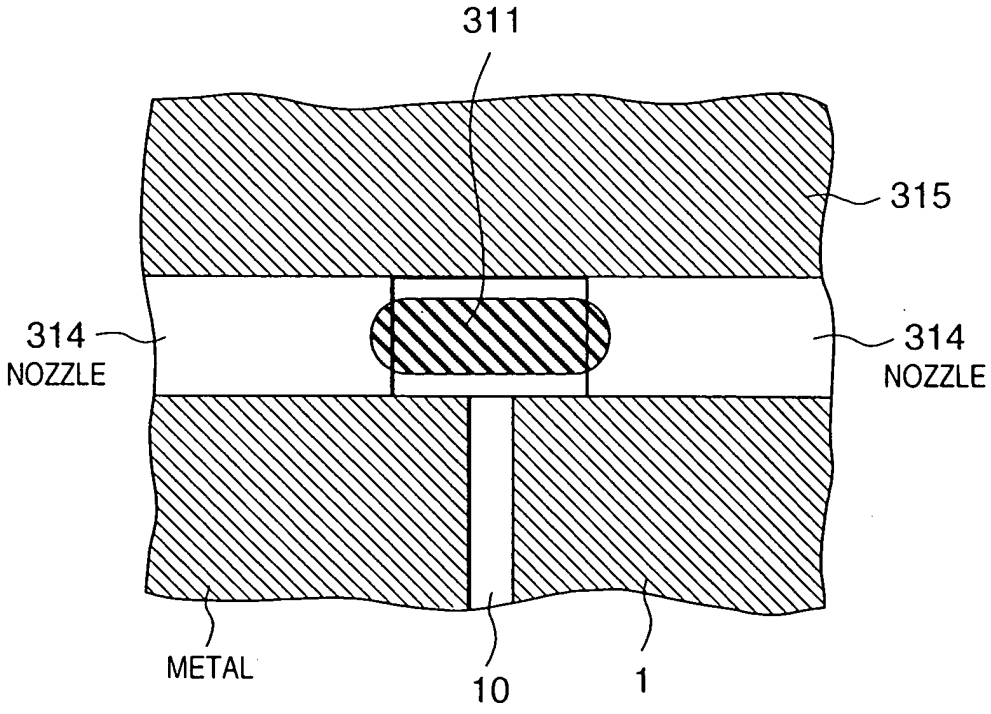


FIG. 37A

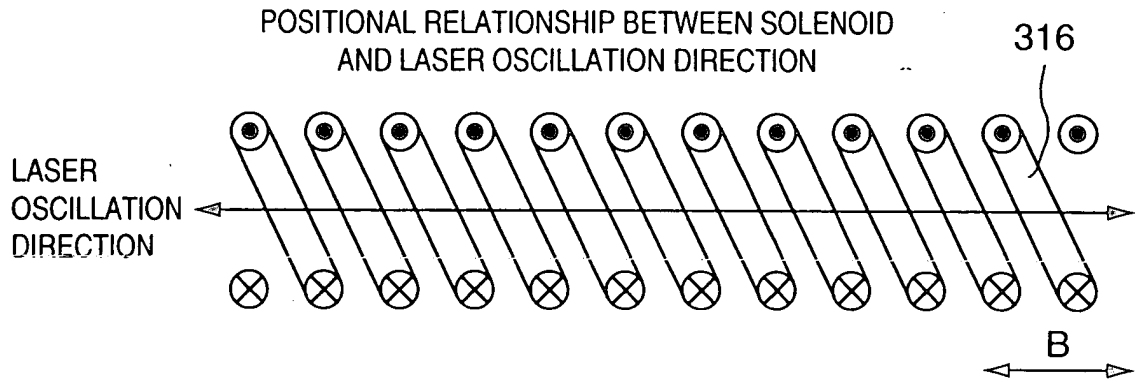


FIG. 37B

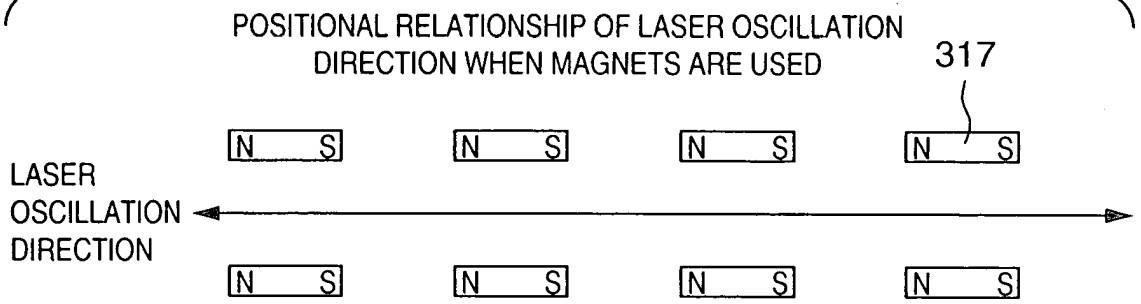


FIG. 38A

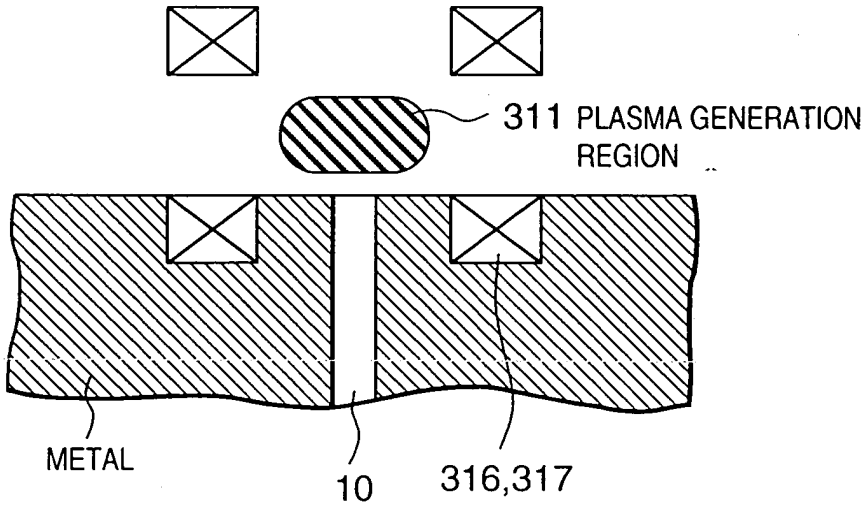


FIG. 38B

SECTION VIEWED IN SLOT SHORT-AXIS DIRECTION
(DIRECTION OF MAGNETIC FIELD IS
PERPENDICULAR TO PAPER SURFACE)

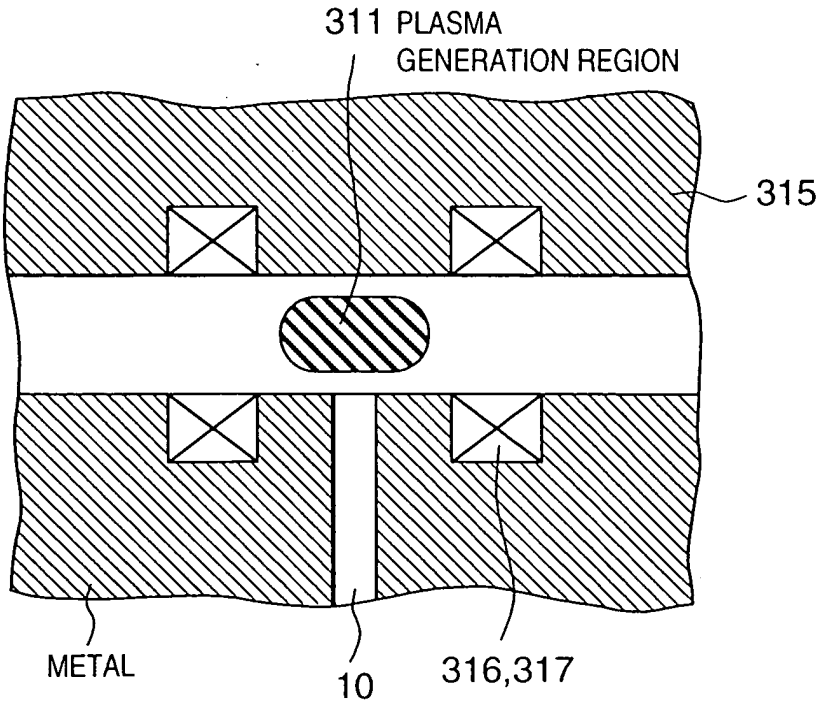


FIG. 39

NOZZLE SLOT-MAGNETIC FIELD COMPOSITE TYPE CONFINING STRUCTURE

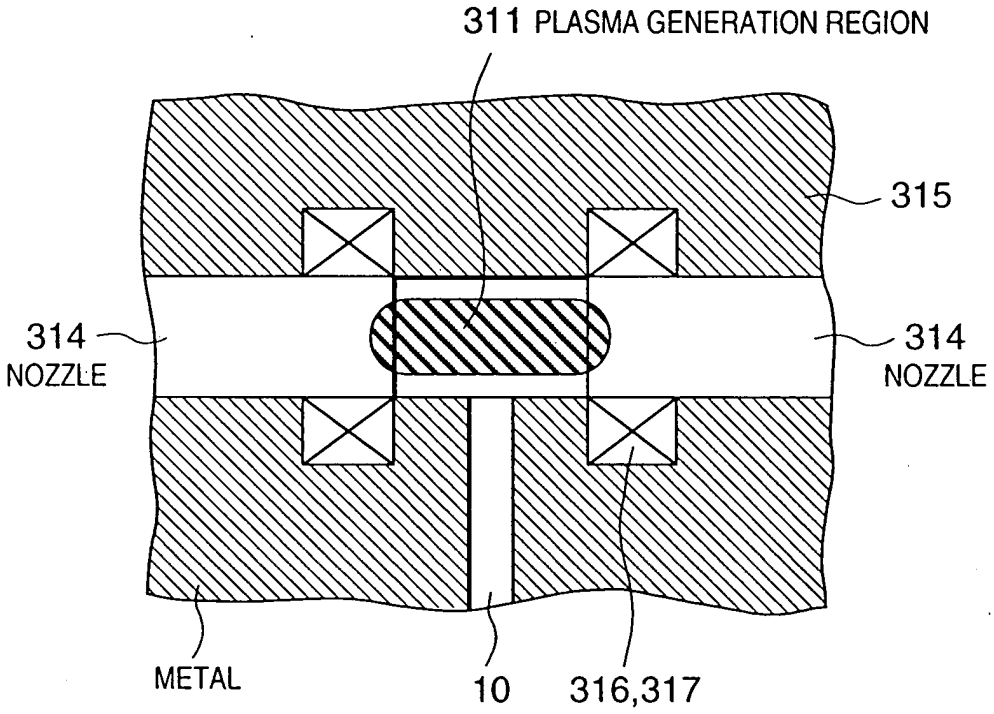


FIG. 40

WHEN SLOT WIDTH IS SMALL

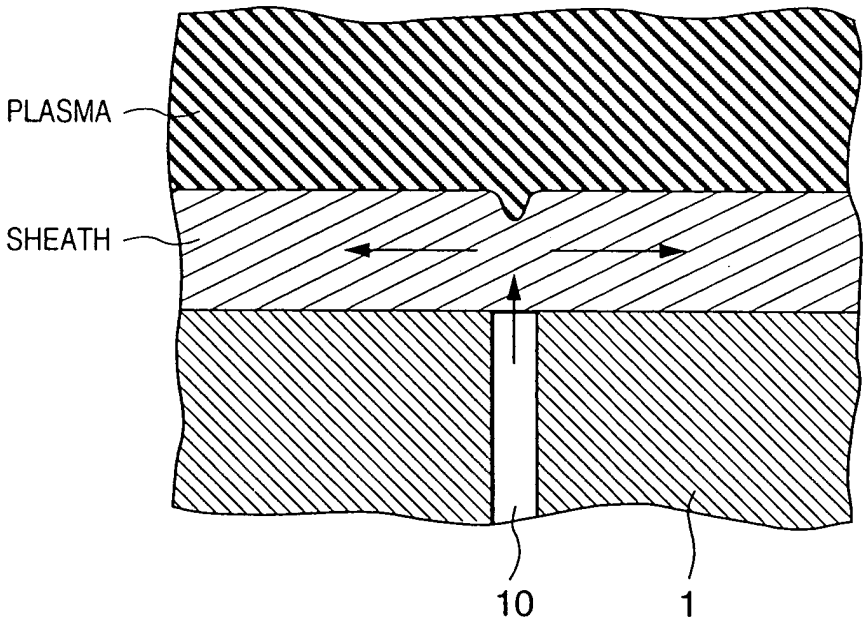


FIG. 41

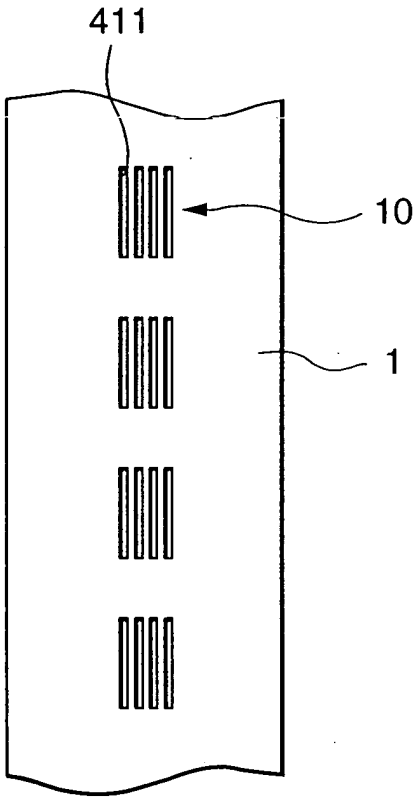


FIG. 42

WHEN SLOT WIDTH IS SMALL

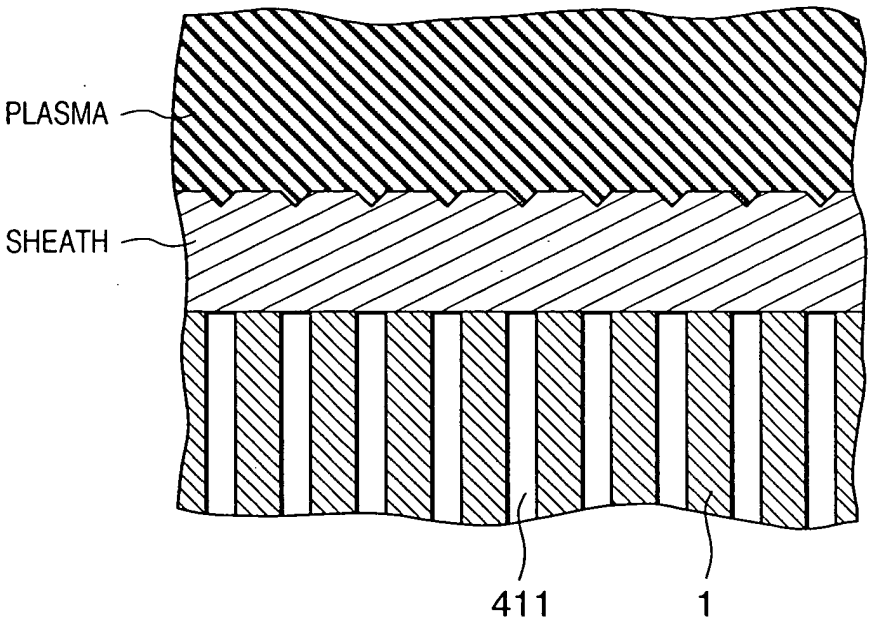


FIG. 43

WHEN SLOT WIDTH IS SMALL

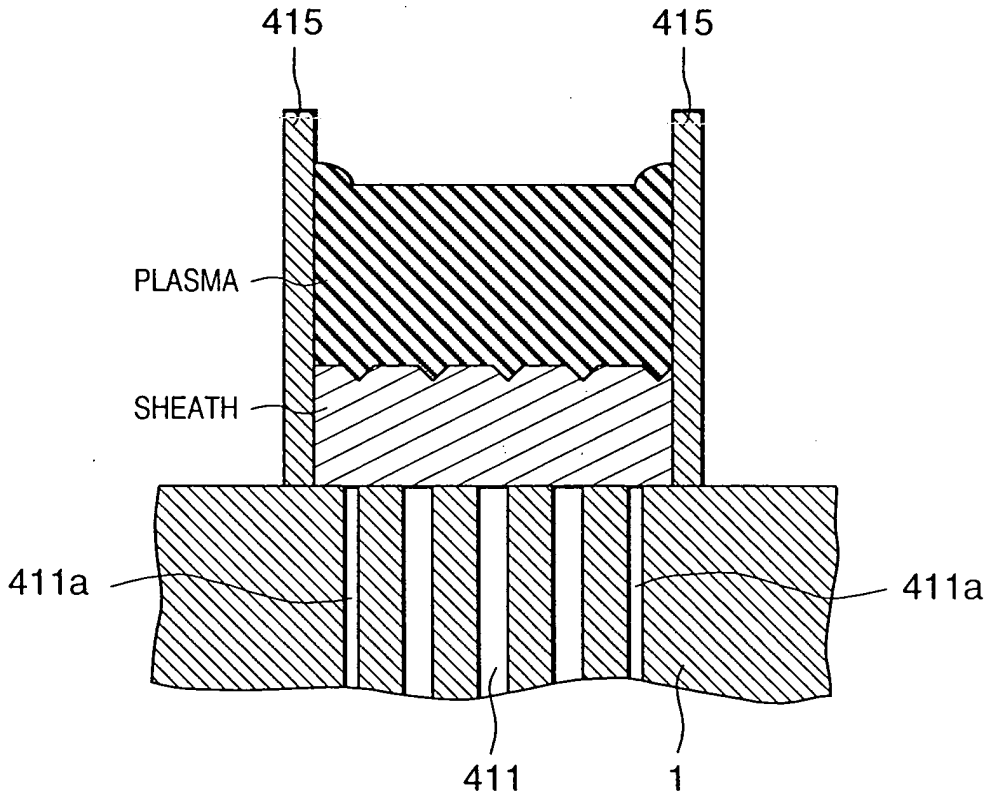


FIG. 44

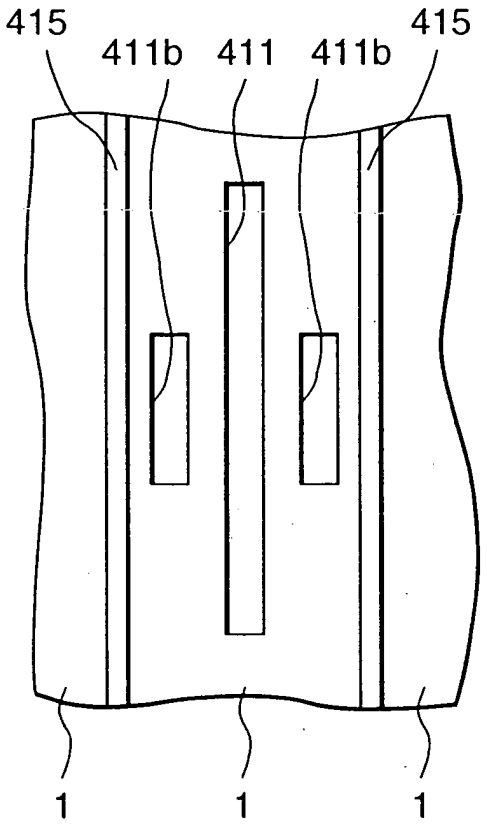


FIG. 45

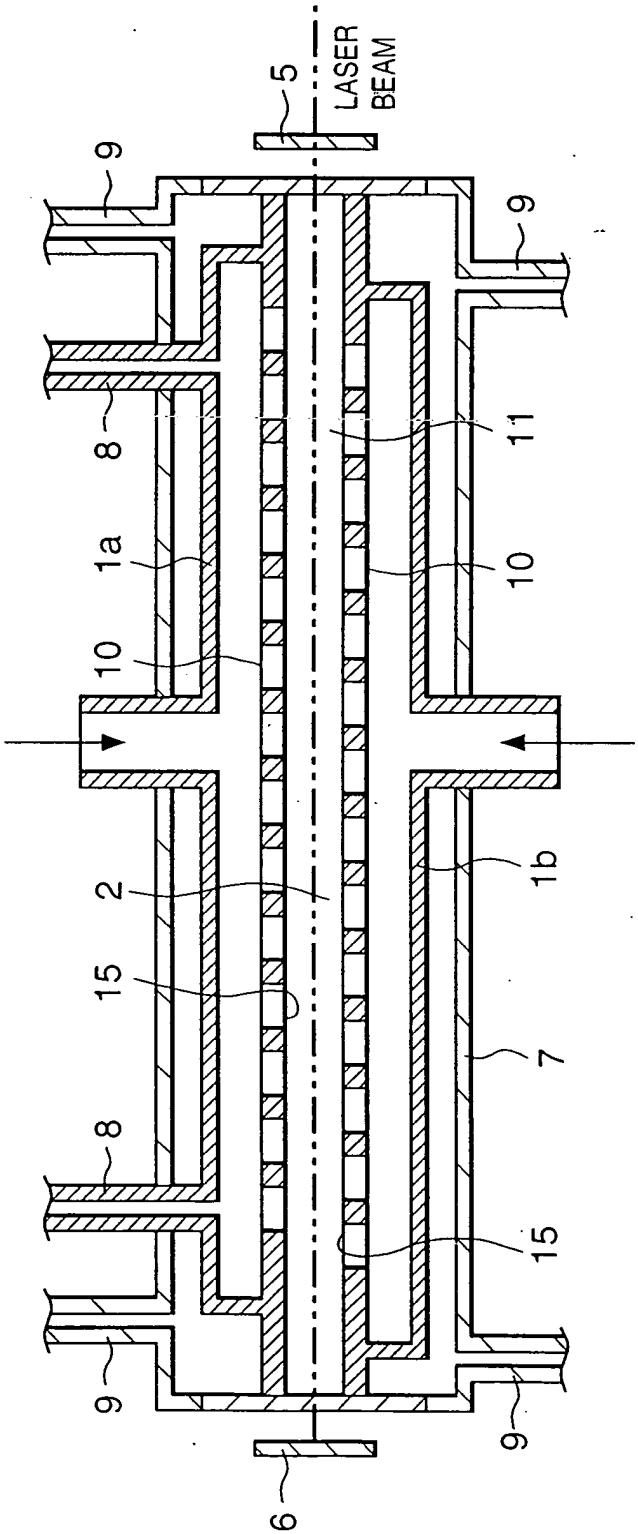


FIG. 46

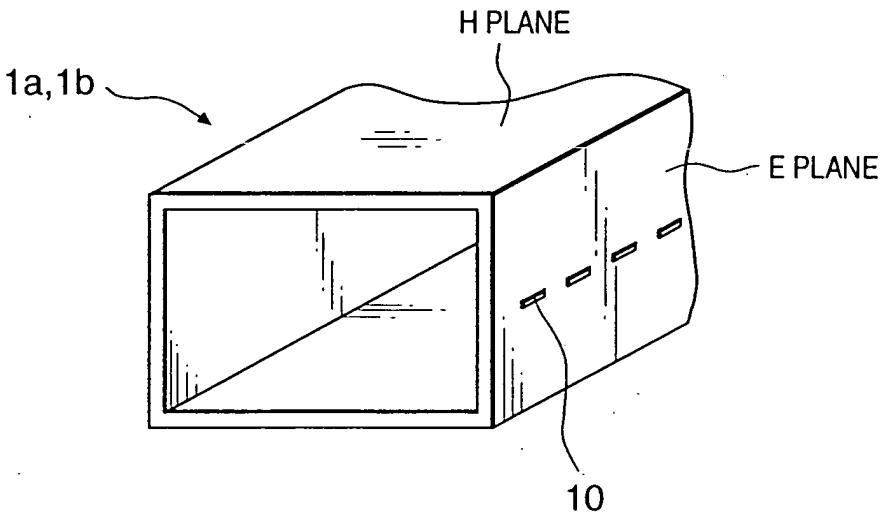


FIG. 47

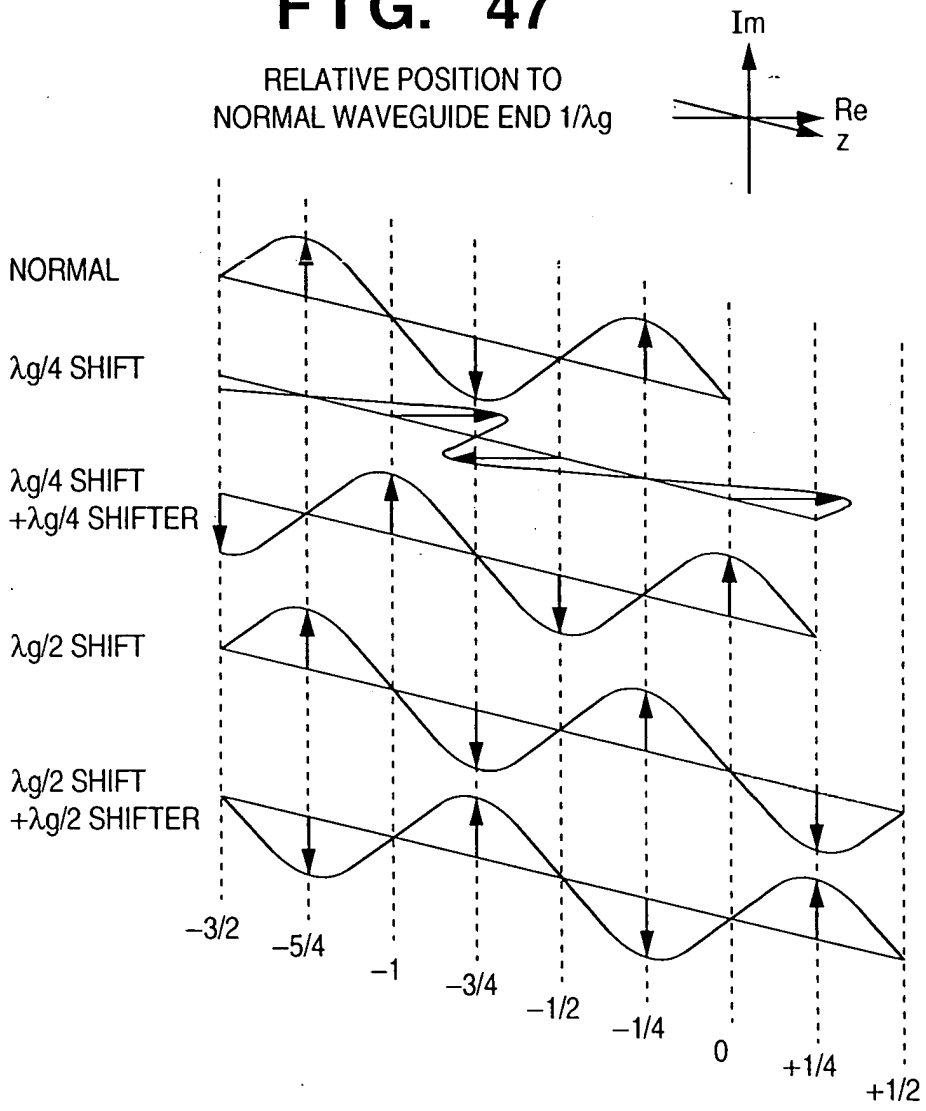
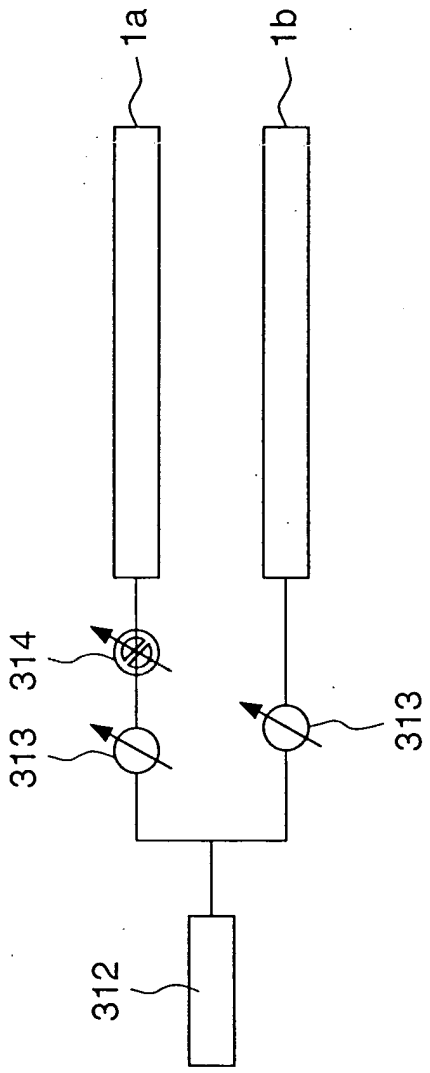

RELATIVE POSITION TO
NORMAL WAVEGUIDE END 1/λg
Im
Re
z
NORMAL
λg/4 SHIFT
λg/4 SHIFT
+λg/4 SHIFTER
λg/2 SHIFT
λg/2 SHIFT
+λg/2 SHIFTER
−3/2
−5/4
−1
−3/4
−1/2
−1/4
0
+1/4
+1/2

FIG. 48



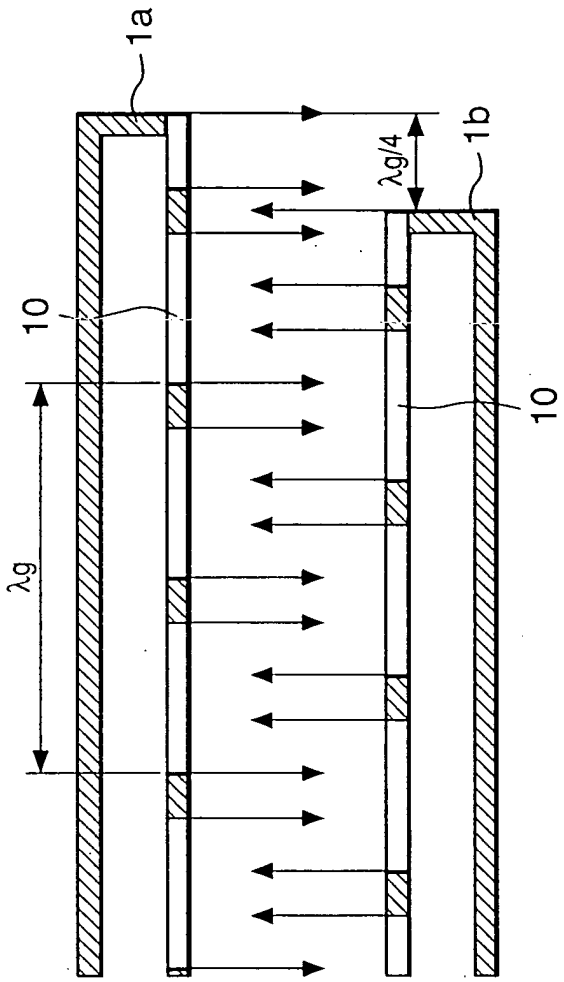


FIG. 49A

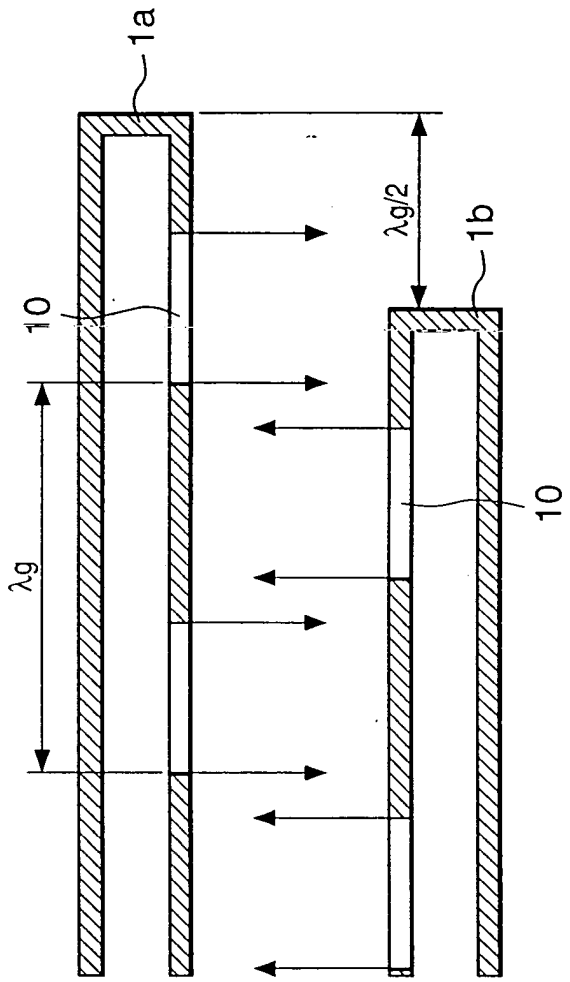


FIG. 49B

FIG. 50

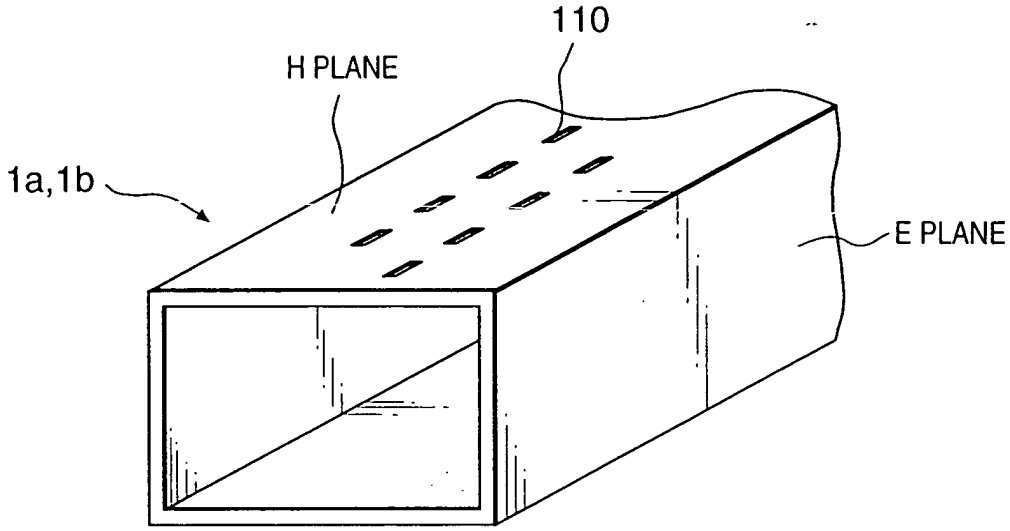
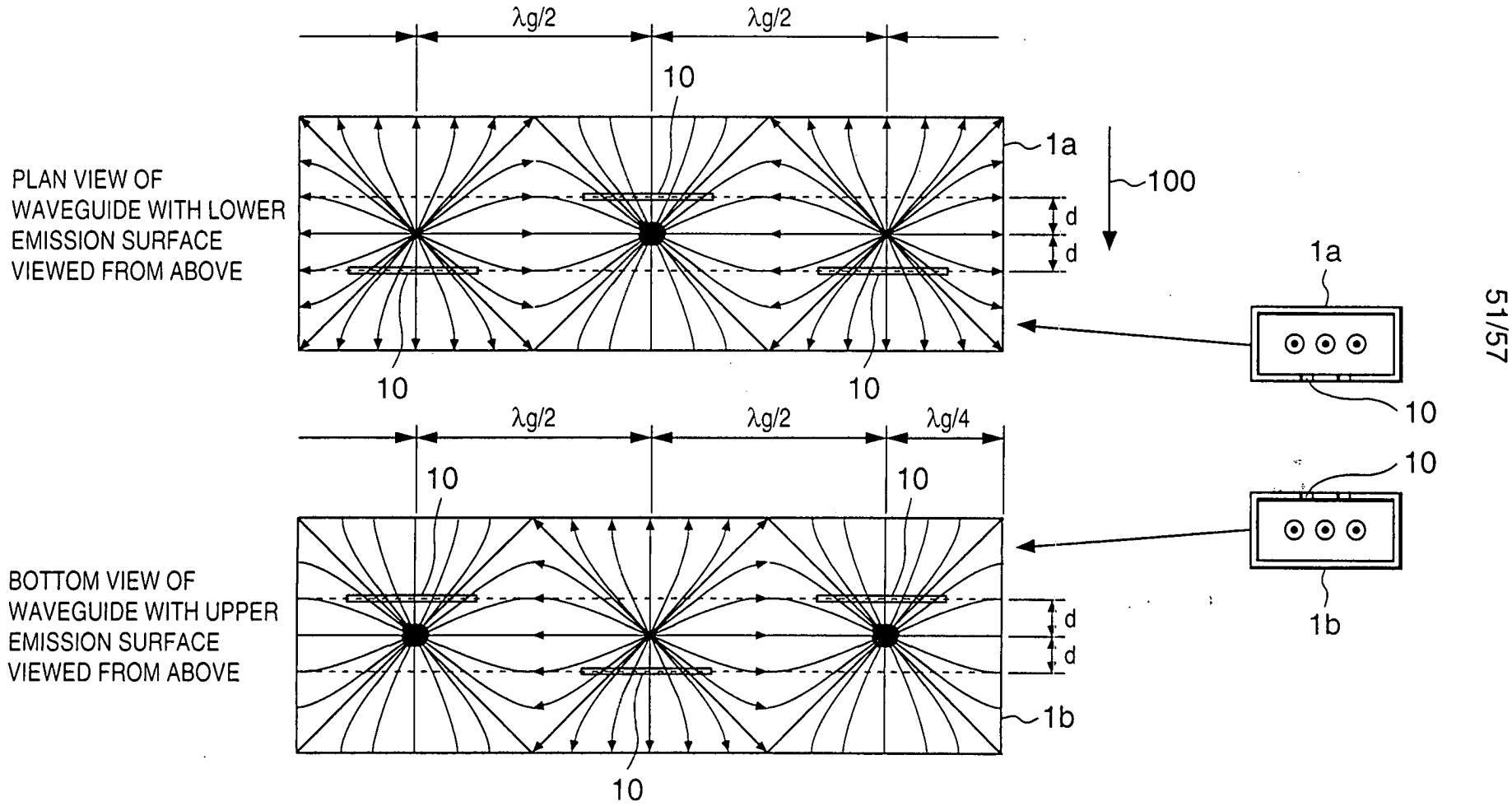


FIG. 51


PLAN VIEW OF WAVEGUIDE WITH LOWER EMISSION SURFACE VIEWED FROM ABOVE
λg/2
λg/2
10
1a
100
d
d
10
10
1a
10
λg/2
λg/2
λg/4
10
10
10
BOTTOM VIEW OF WAVEGUIDE WITH UPPER EMISSION SURFACE VIEWED FROM ABOVE
d
d
1b
10
1b

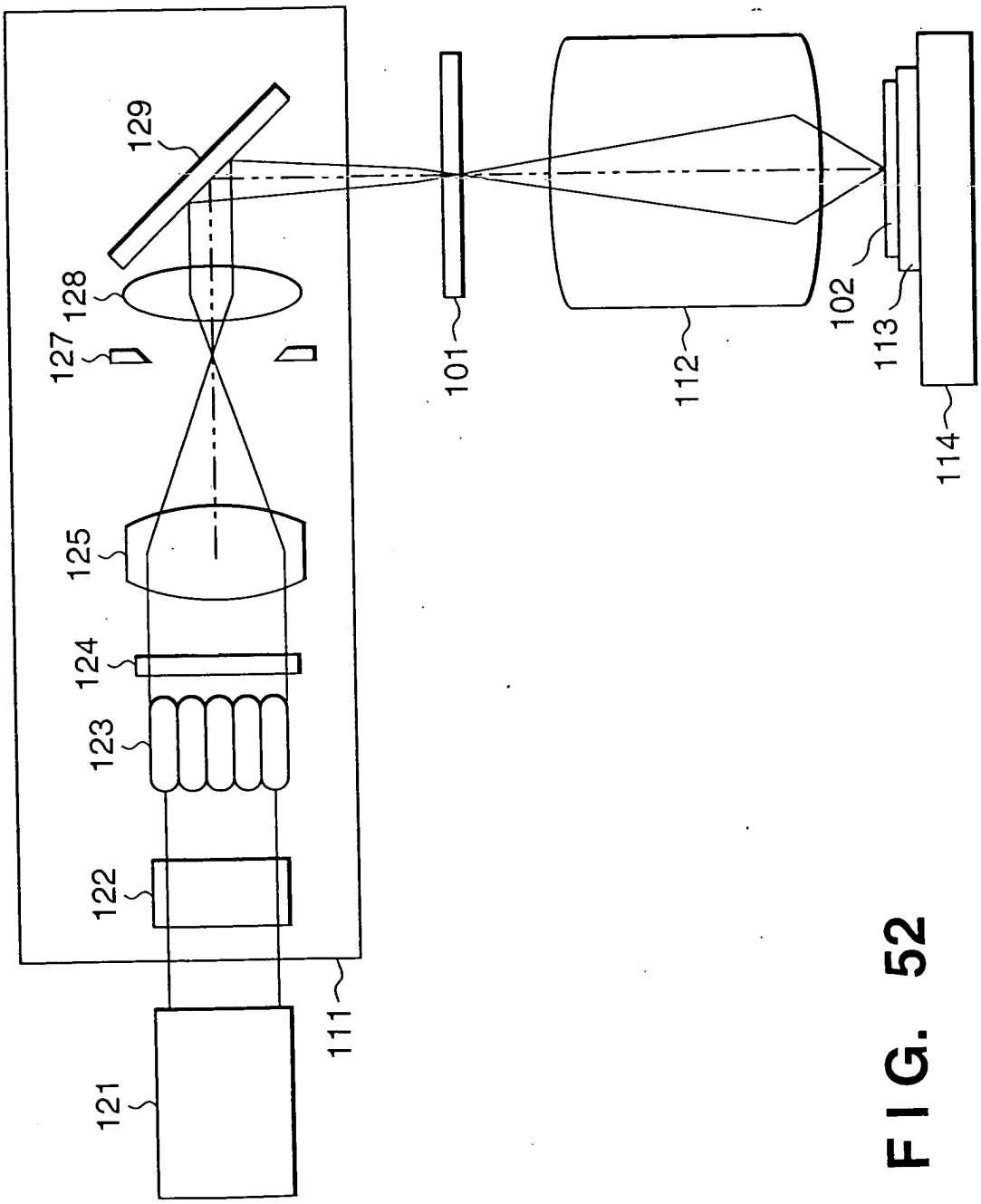


FIG. 52

FIG. 53

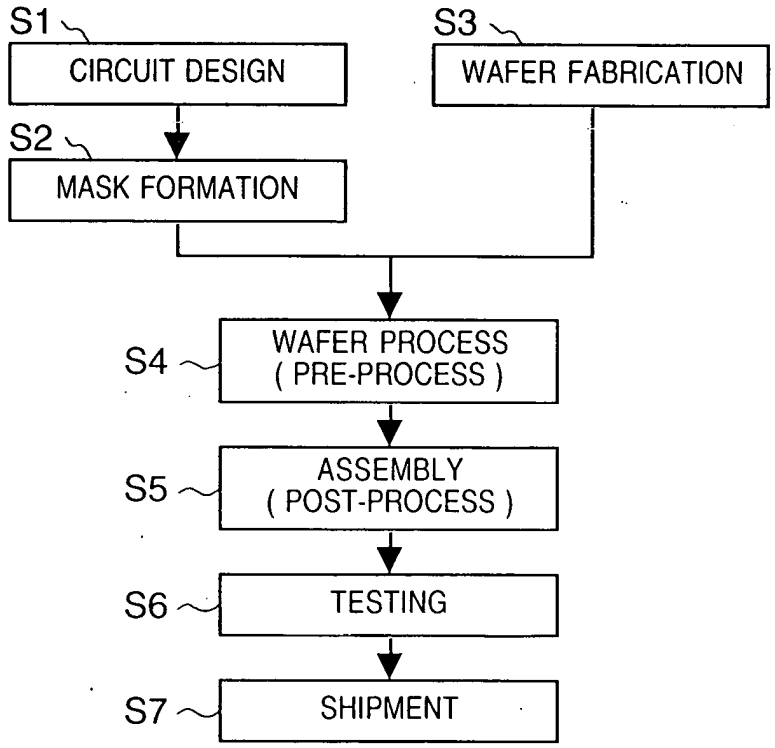

S1
CIRCUIT DESIGN
S2
MASK FORMATION
S3
WAFER FABRICATION
S4
WAFER PROCESS
(PRE-PROCESS)
S5
ASSEMBLY
(POST-PROCESS)
S6
TESTING
S7
SHIPMENT

FIG. 54

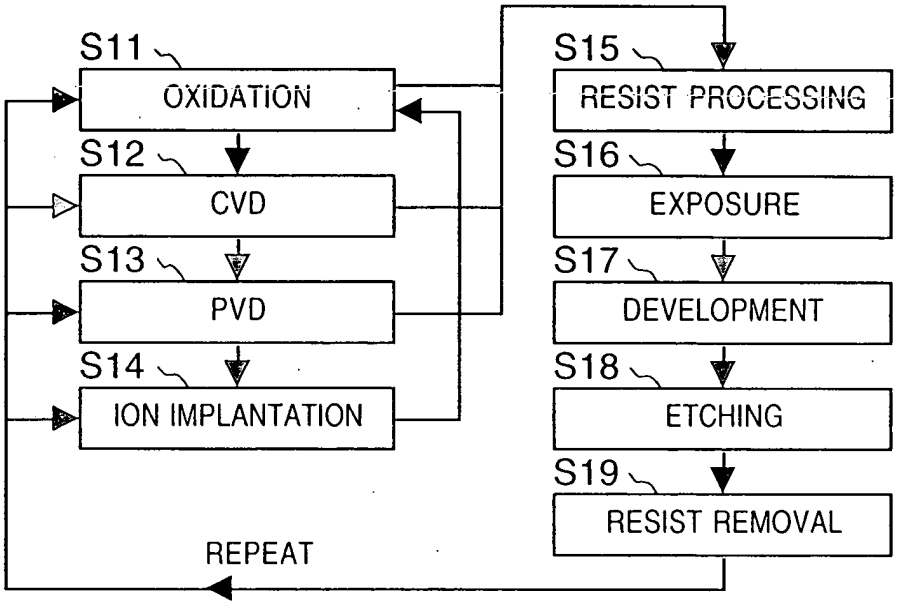

S11
OXIDATION
S12
CVD
S13
PVD
S14
ION IMPLANTATION
S15
RESIST PROCESSING
S16
EXPOSURE
S17
DEVELOPMENT
S18
ETCHING
S19
RESIST REMOVAL
REPEAT

FIG. 55

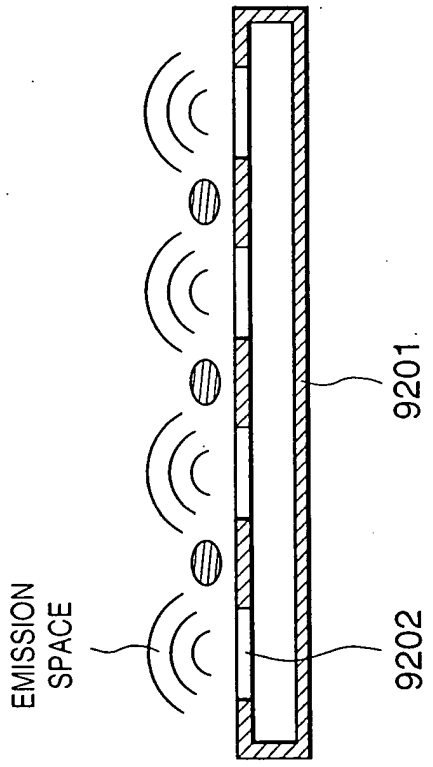


FIG. 56A

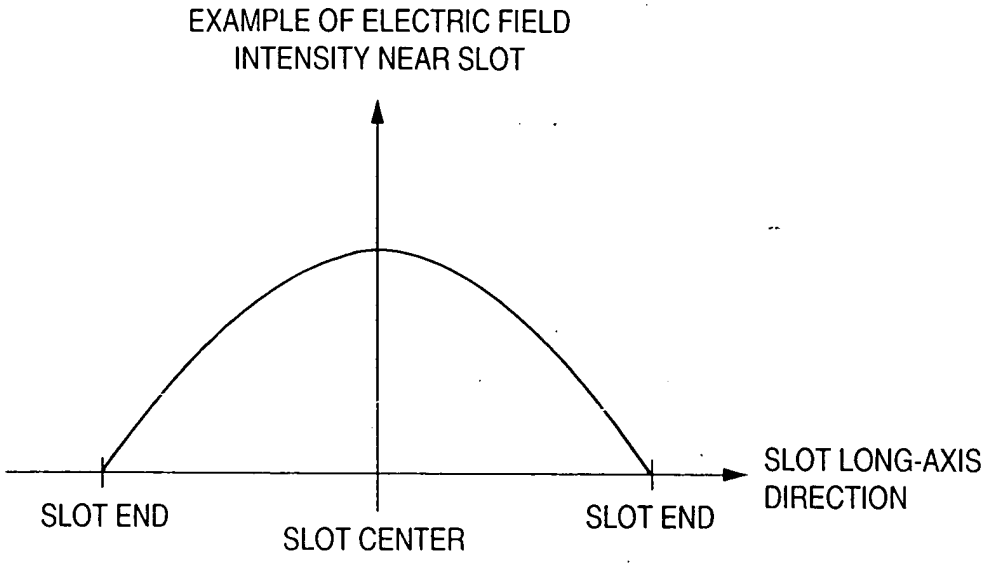


FIG. 56B

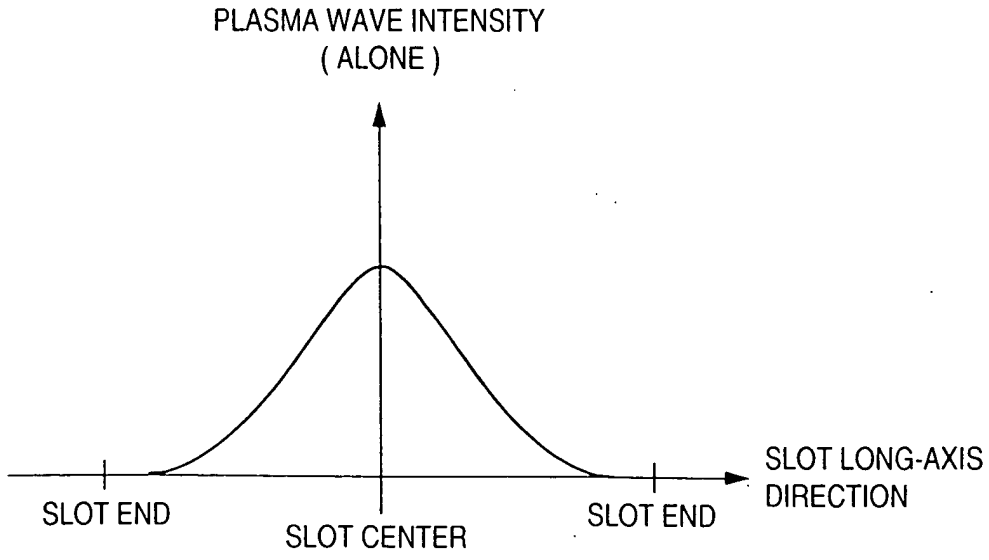


FIG. 57